



SPLIT-TYPE, HEAT PUMP AIR CONDITIONERS

Changes for the Better

Revision D:

- RoHS PARTS LIST has been changed.

Please void OB455 REVISED EDITION-C.

OUTDOOR UNIT SERVICE MANUAL

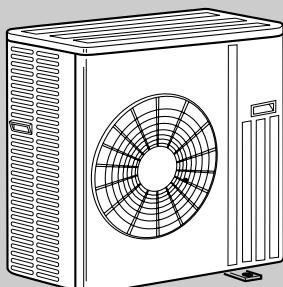


**No. OB455
REVISED EDITION-D**

**Wireless type
Models**

MUZ-GB50VA - **E1**
MUZ-GB50VA - **E2**

Indoor unit service manual
MSZ-GB-VA Series (OB454)
Refrigerant service manual
R410A REFRIGERANT (OBR01)



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NOTE:

- This service manual describes technical data of the outdoor units.



Revision A:

- Compressor has been changed.

	Model	RoHS PARTS LIST number
Previous	SNB130FLDH	E12 851 900
New	SNB130FLDH1	E12 939 900

Revision B:

- REFRIGERANT SYSTEM DIAGRAM has been changed.
 - Oil separator has been added.
 - Capillary tube has been added. ($\phi 1.8 \times \phi 0.6 \times 1000$)
- MUZ-GB50VA-E2 has been added.
- Check of outdoor thermistors(10-6.⑧) has been corrected.

Revision C:

- RoHS PARTS LIST has been changed.

Revision D:

- RoHS PARTS LIST has been changed.

1

TECHNICAL CHANGES

MUZ-GA50VA -E1 → MUZ- GB50VA -E1

1. Refrigerant filling capacity has been changed.
2. Outdoor electronic control P.C. board has been changed.

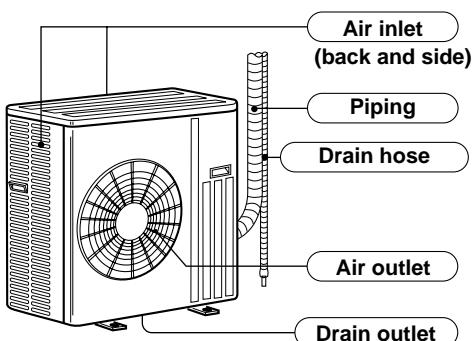
MUZ-GB50VA -E1 → MUZ- GB50VA -E2

1. Compressor has been changed. (SNB130FLDH1 → SNB130FLEH1)
2. Outdoor electronic control P.C. board has been changed.

2

PART NAMES AND FUNCTIONS

MUZ-GB50VA



ACCESSORIES

		MUZ-GB50VA
①	Drain socket	1
②	Drain cap φ33	2

3

SPECIFICATION

Outdoor model			MUZ-GB50VA			
Function			Cooling	Heating		
Power supply			Single phase 230V,50Hz			
Capacity	Capacity Rated frequency(Min.-Max.)	kW	5.0(0.9-5.8)	5.8(0.9-7.8)		
	Dehumidification	ℓ /h	2.5	—		
	Air flow *1(High/Low)	m³ /h	2,940/1,650	2,940/2,210		
	Power outlet	A	20			
	Running current *1	A	7.23	7.43		
	Power input *1	W	1,610	1,660		
	Power factor *1	%	97			
Electrical data	Starting current *1	A	7.46			
	Compressor motor current *1	A	6.91	7.11		
	Fan motor current *1	A	0.32			
Coefficient of performance(C.O.P) *1			3.03	3.41		
Compressor	Model	E1	SNB130FLDH or SNB130FLDH1			
		E2	SNB130FLEH1			
	Output	W	850			
	Winding resistance(at 20°C)	Ω	U-V 0.45 W-U 0.45 V-W 0.45			
Fan motor	Model		RC0J60-AA			
	Winding resistance(at 20°C)	Ω	BLK-WHT 15.2			
			WHT-RED 15.2 RED-BLK 15.2			
Dimensions W×H×D			840×850×330			
Weight			53			
Special remarks	Sound level *1(High/Low)	dB(A)	52/51	55/53		
	Fan speed (High/Low)	rpm	800/480	800/620		
	Fan speed regulator		2			
	Refrigerant filling capacity(R410A)	kg	1.50			
Refrigeration oil (Model)			NEO22			

NOTE : Test conditions are based on ISO 5151.

Cooling : Indoor Dry-bulb temperature 27°C Wet-bulb temperature 19°C
Outdoor Dry-bulb temperature 35°C Wet-bulb temperature 24°C

Heating : Indoor Dry-bulb temperature 20°C Wet-bulb temperature 15°C
Outdoor Dry-bulb temperature 7°C Wet-bulb temperature 6°C

Refrigerant piping length (one way): 5m

*1 Measured under rated operating frequency

Specifications and rating conditions of main electric parts

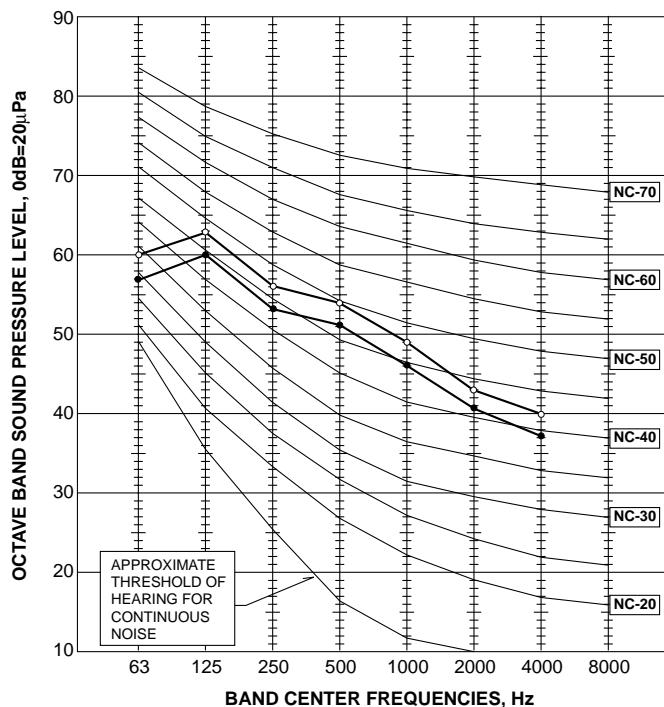
Item	Model	MUZ-GB50VA
Current transformer (CT1,2)		ETQ19Z68AY
Current transformer (CT61)		ETQ19Z53AY
Smoothing capacitor (CB1,2,3)		560μF 450V
Fuse (F64)		250V 2A
Fuse (F801)		250V 3.15A
Fuse (F911)		250V 1A
Expansion valve coil (LEV)		CAM-MD12ME
Intelligent power module (IPM)		PS21244-A
Intelligent power module (HC930)		PS21661-RZ
Reactor (L)		340μH 20A
Power factor controller (PFC)		PS51259-A
Resistor (R64A,B)		10Ω 10W
Resistor (R937A,B)		1.1Ω 2W 2%
Resistor (RS1~4)		0.04Ω 7W
Solenoid coil relay (SSR61)		TLP3506
Terminal block (TB1)		3P
Terminal block (TB2)		3P
Relay (X64)		G4A
R.V. coil (21S4)		LD30013

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NOISE CRITERIA CURVES

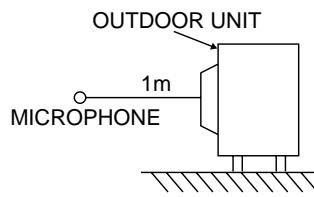
MUZ-GB50VA

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
High	COOLING	52	●—●
	HEATING	55	○—○



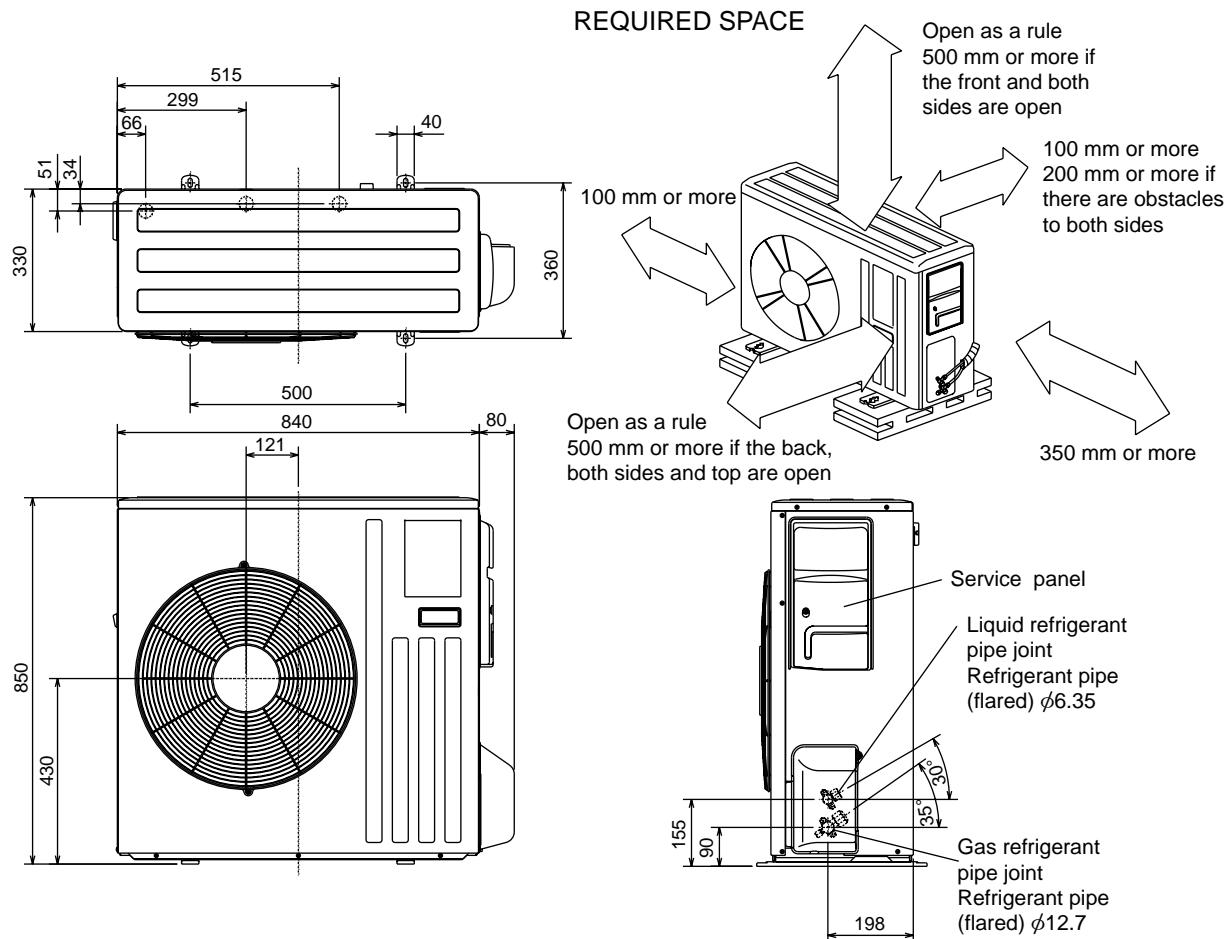
Test conditions

Cooling : Dry-bulb temperature 35°C
Wet-bulb temperature (24°C)
Heating : Dry-bulb temperature 7°C
Wet-bulb temperature 6°C



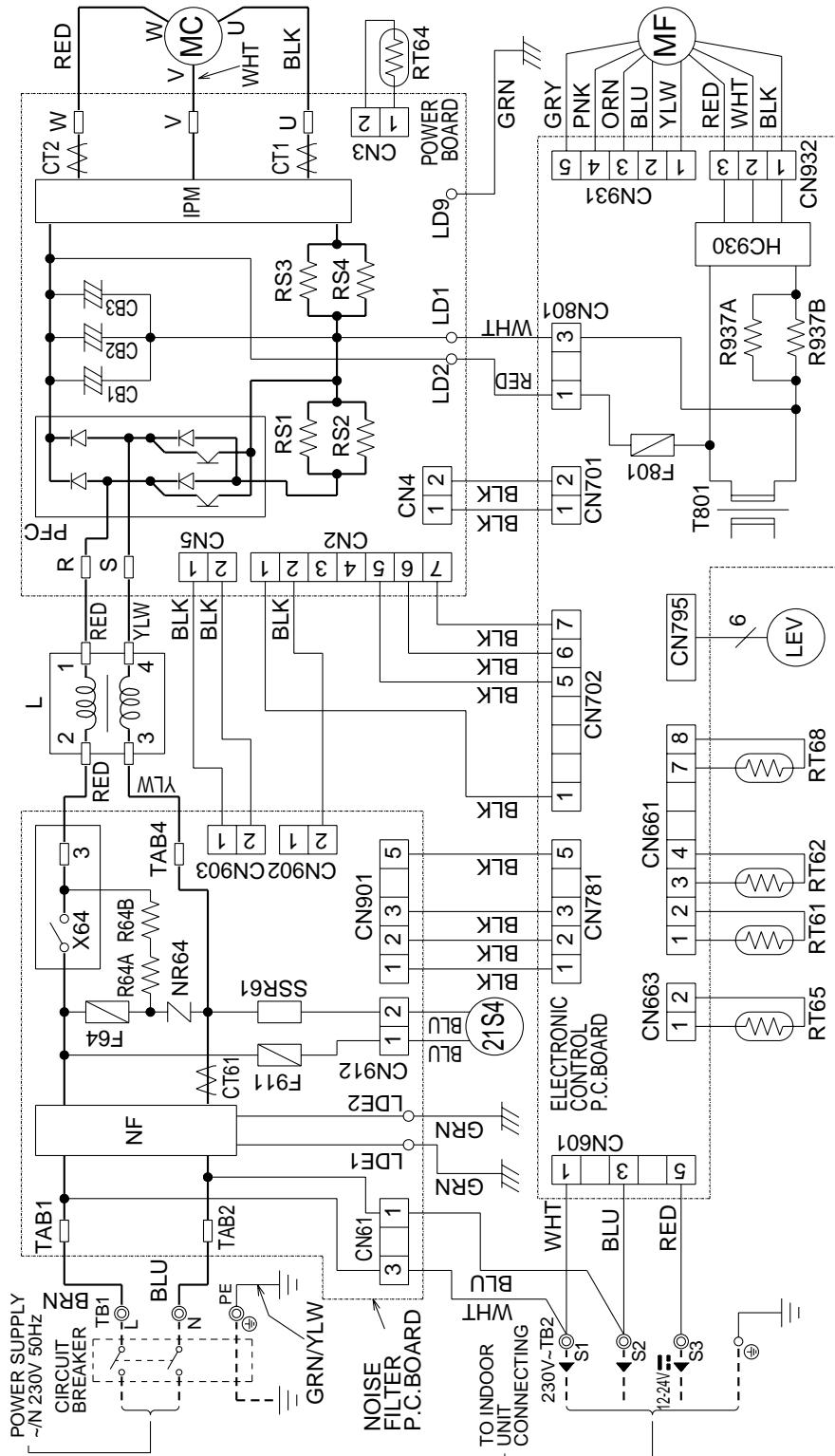
MUZ-GB50VA

Unit: mm



WIRING DIAGRAM

MUZ-GB50VA

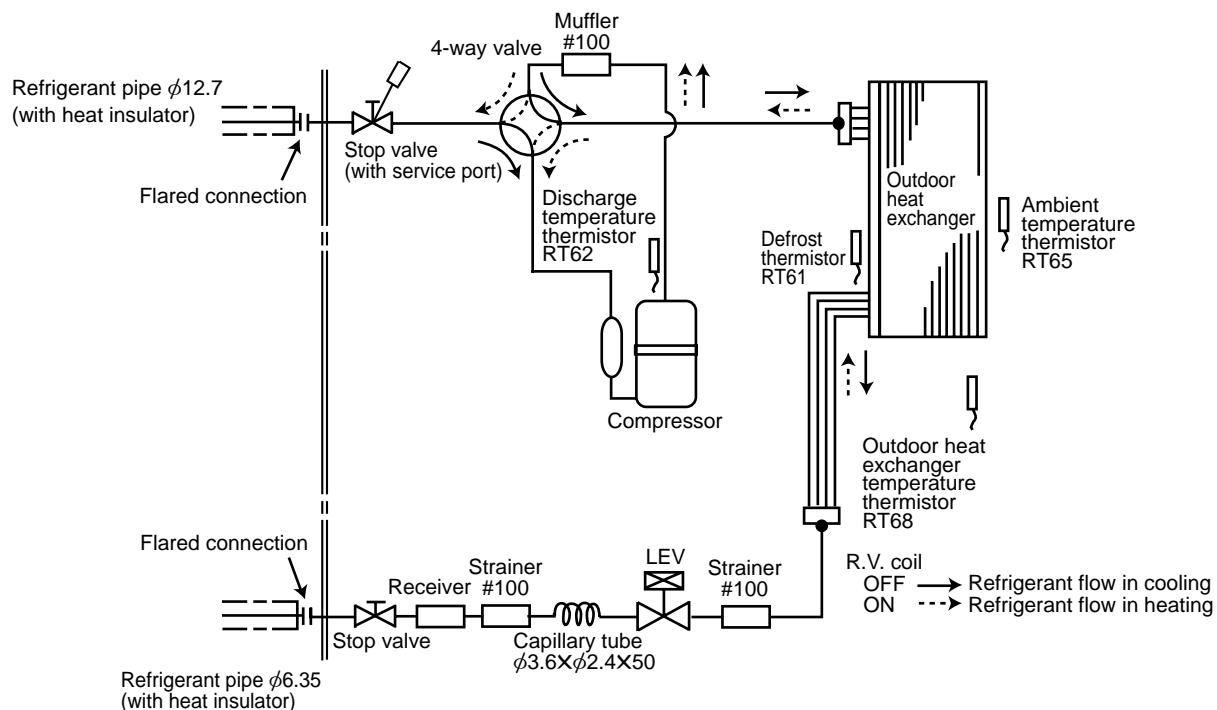


- NOTES:
1. About the indoor side electric wiring
refer to the indoor unit electric wiring diagram for servicing.
 2. Use copper conductors only (for field wiring).
 3. Symbols below indicate.
◎:Terminal block □□:Connector

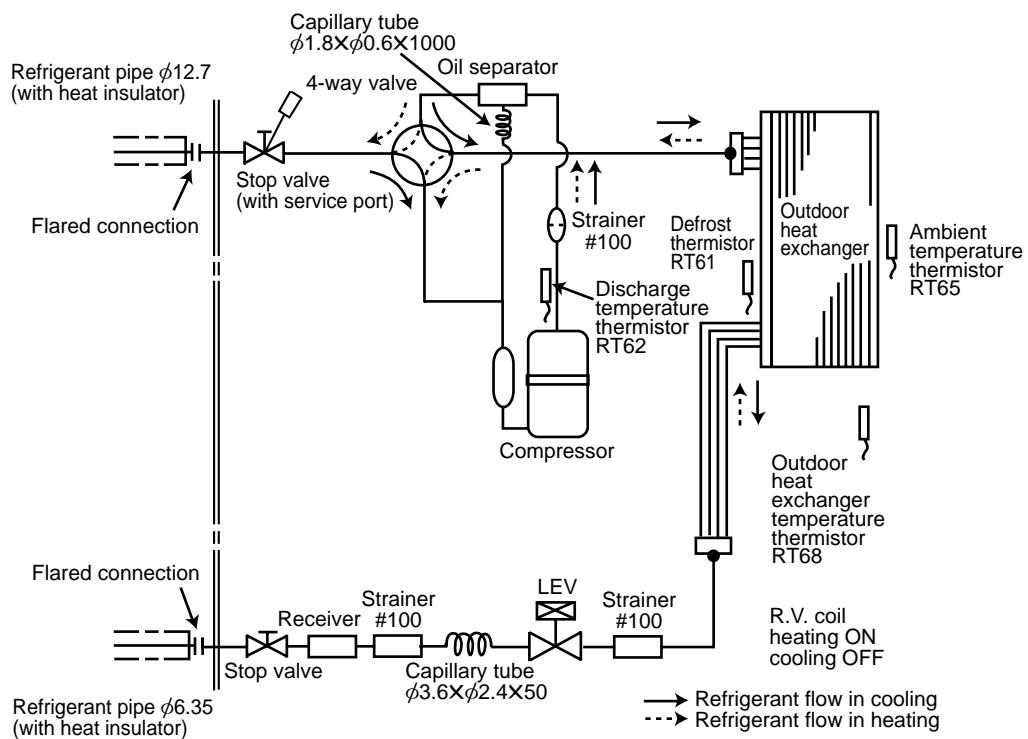
SYMBOL	NAME	SYMBOL	NAME
CB1~3	SMOOTHING CAPACITOR	MC	COMPRESSOR
CT1, 2	CURRENT TRANSFORMER	MF	OUTDOOR FAN MOTOR
CT61	CURRENT TRANSFORMER	NF	NOISE FILTER
F64	FUSE (T2AL 250V)	NR64	VARISTOR
F801	FUSE (T3.15AL 250V)	PFC	POWER FACTOR CONTROLLER
F911	FUSE (T1AL 250V)	R64A, B	RESISTOR
HC930	INTELLIGENT POWER MODULE	R837A, B	RESISTOR
IPM	INTELLIGENT POWER MODULE	RS1~4	RESISTOR
L	REACTOR	RT61	DEFROST THERMISTOR
LEV	EXPANSION VALVE COIL	RT62	DISCHARGE TEMPERATURE THERMISTOR
		X64	RELAY
		RT68	R.V. COIL
		21S4	

MUZ-GB50VA-[E1]

Unit:mm

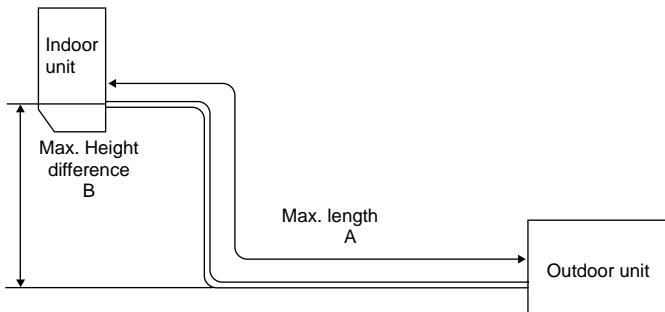
MUZ-GB50VA-[E1]
MUZ-GB50VA-[E2]

Unit:mm



MAX. REFRIGERANT PIPING LENGTH and MAX. HEIGHT DIFFERENCE

Model	Refrigerant piping : m			Piping size O.D : mm			
	Max. length A	Max. Height difference B					
		Gas	Liquid				
MUZ-GB50VA	30	15		12.7	6.35		



ADDITIONAL REFRIGERANT CHARGE (R410A:g)

Model	Outdoor unit precharged	Refrigerant piping length (one way)					
		7m	10m	15m	20m	25m	30m
MUZ-GB50VA	1,500	0	60	160	260	360	460

Calculation : $Xg=20\text{g}/\text{m} \times (\text{Refrigerant piping length (m)} - 7)$

NOTE : Refrigerant piping exceeding 7m requires additional refrigerant charge according to the calculation.

MUZ-GB50VA

The standard specifications apply only to the operation of the air conditioner under normal conditions. Since operating conditions vary according to the areas where these units are installed, the following information has been provided to clarify the operating characteristics of the air conditioner under the conditions indicated by the performance curve.

(1) GUARANTEED VOLTAGE

198 ~ 264V, 50Hz

(2) AIR FLOW

Air flow should be set at MAX.

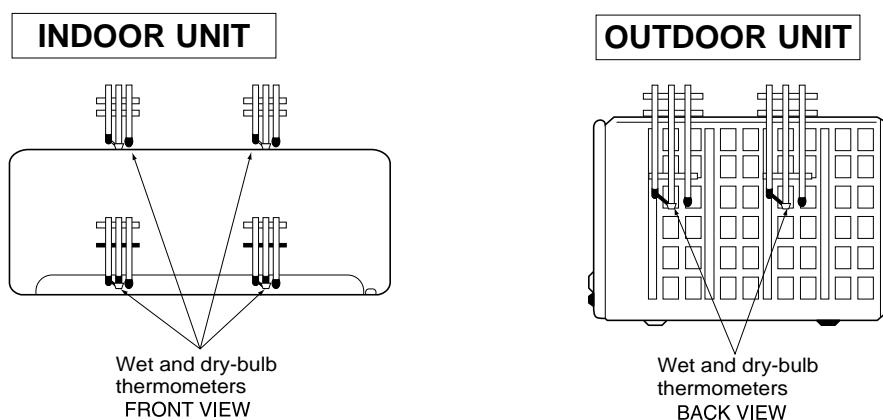
(3) MAIN READINGS

- | | |
|---|---------|
| (1) Indoor intake air wet-bulb temperature : | °C [WB] |
| (2) Indoor outlet air wet-bulb temperature : | °C [WB] |
| (3) Outdoor intake air dry-bulb temperature : | °C [DB] |
| (4) Total input: | W |
| (5) Indoor intake air dry-bulb temperature : | °C [DB] |
| (6) Outdoor intake air wet-bulb temperature : | °C [WB] |
| (7) Total input : | W |
- Cooling
Heating

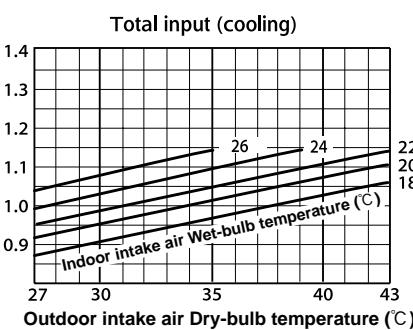
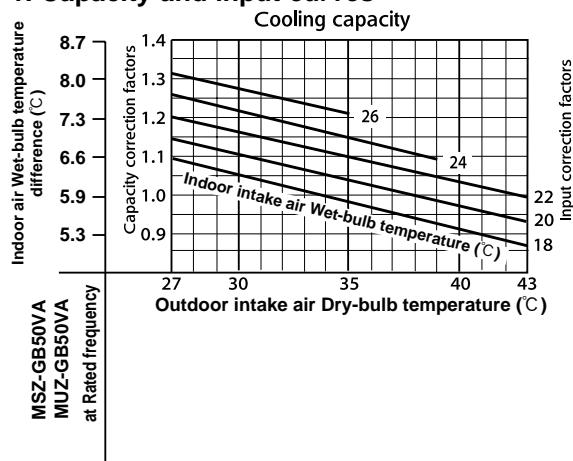
Indoor air wet/dry-bulb temperature difference on the left side of the following chart shows the difference between the indoor intake air wet/dry-bulb temperature and the indoor outlet air wet/dry-bulb temperature for your reference at service.

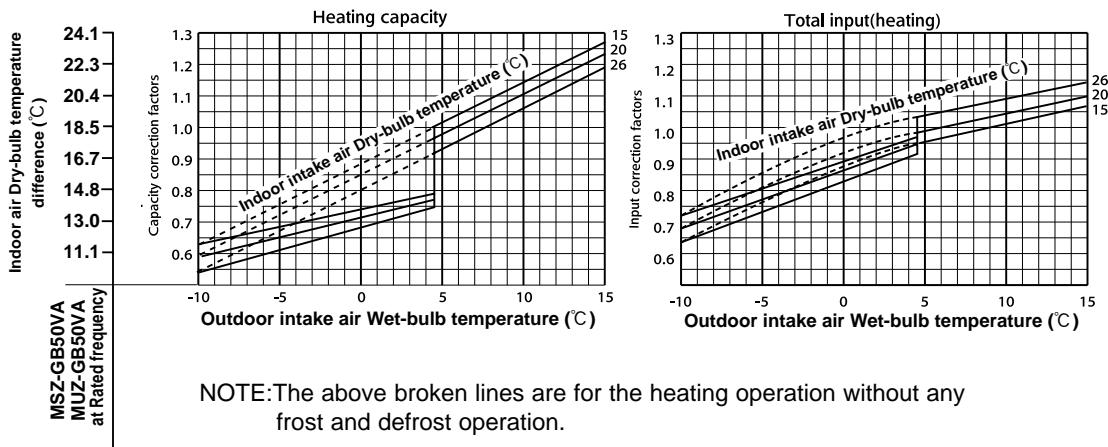
How to measure the indoor air wet-bulb / dry-bulb temperature difference

1. Attach at least 2 sets of wet and dry-bulb thermometers to the indoor air intake as shown in the figure, and at least 2 sets of wet and dry-bulb thermometers to the indoor air outlet. The thermometers must be attached to the position where air speed is high.
2. Attach at least 2 sets of wet and dry-bulb thermometers to the outdoor air intake. Cover the thermometers to prevent direct rays of the sun.
3. Check that the air filter is cleaned.
4. Open windows and doors of room.
5. Press the EMERGENCY OPERATION switch once (twice) to start the EMERGENCY COOL (HEAT) MODE.
6. When system stabilizes after more than 15 minutes, measure temperature and take an average temperature.
7. 10 minutes later, measure temperature again and check that the temperature does not change.



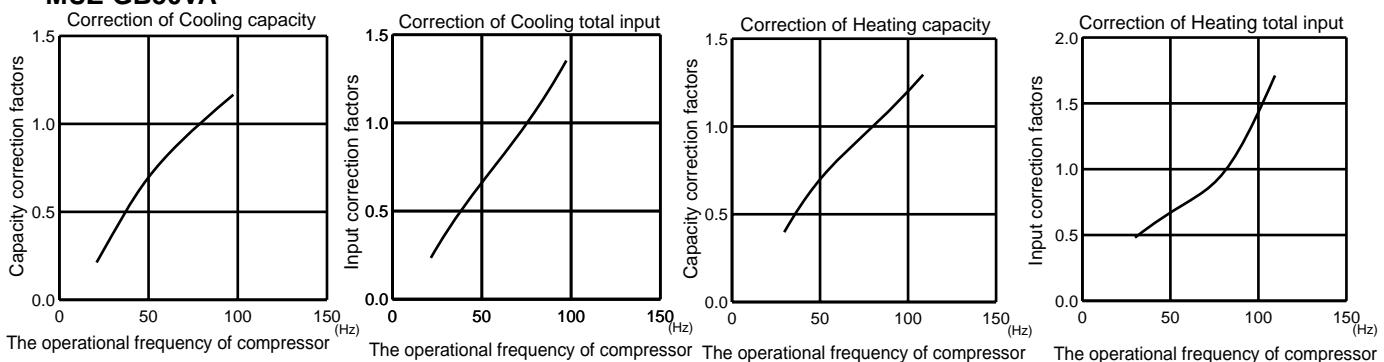
8-1. Capacity and input curves





8-2. Capacity and input correction by operational frequency of compressor

MUZ-GB50VA



8-3. Test run operation (How to operate fixed-frequency operation)

1. Press EMERGENCY OPERATION switch to COOL or HEAT mode (COOL : Press once, HEAT : Press twice).
2. Test run operation starts and continues to operate for 30 minutes.
3. Compressor operates at rated frequency in COOL mode or 58Hz in HEAT mode.
4. Indoor fan operates at High speed.
5. After 30 minutes, test run operation finishes and EMERGENCY OPERATION starts (Operation frequency of compressor varies).
6. To cancel test run operation (EMERGENCY OPERATION), press EMERGENCY OPERATION switch or any button on remote controller.

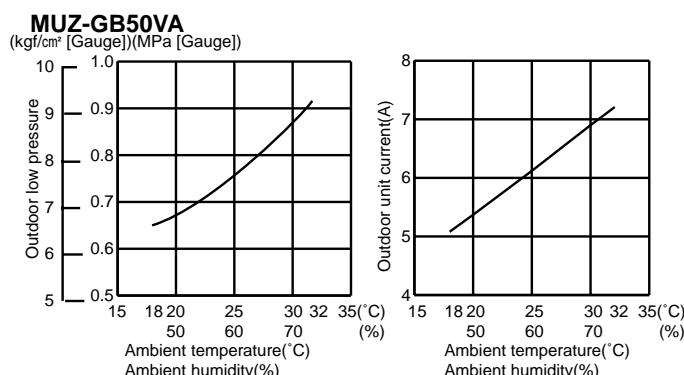
8-4. OUTDOOR LOW PRESSURE AND OUTDOOR UNIT CURRENT

NOTE: The unit of pressure has been changed to MPa based on the international system of units (SI unit system).
The conversion factor is: $1(\text{MPa [Gauge]}) = 10.2 (\text{Kgf/cm}^2 [\text{Gauge}])$

COOL operation

- ① Both indoor and outdoor unit are under the same temperature/humidity condition.
- ② Operation : TEST RUN OPERATION (refer to 8-3.)

Dry-bulb temperature(°C)	Relative humidity(%)
20	50
25	60
30	70

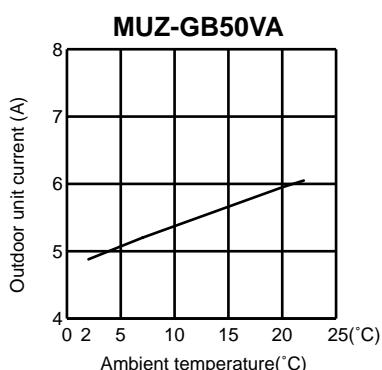


HEAT operation

- ① Condition :

	Indoor	Outdoor			
Dry bulb temperature (°C)	20.0	2	7	15	20.0
Wet bulb temperature (°C)	14.5	1	6	12	14.5

- ② Operation : TEST RUN OPERATION (refer to 8-3.)



PERFORMANCE DATA COOL operation at Rated frequency

MSZ-GB50VA : MUZ-GB50VA

CAPACITY:5.0(kW) SHF:0.69 INPUT:1650(W)

INDOOR DB(°C)	INDOOR WB(°C)	OUTDOOR DB(°C)											
		21				25				27			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	5.88	3.00	0.51	1320	5.63	2.87	0.51	1386	5.40	2.75	0.51	1452
21	20	6.13	2.39	0.39	1386	5.88	2.29	0.39	1469	5.70	2.22	0.39	1502
22	18	5.88	3.23	0.55	1320	5.63	3.09	0.55	1386	5.40	2.97	0.55	1452
22	20	6.13	2.63	0.43	1386	5.88	2.53	0.43	1469	5.70	2.45	0.43	1502
22	22	6.38	1.98	0.31	1436	6.15	1.91	0.31	1526	6.00	1.86	0.31	1568
23	18	5.88	3.47	0.59	1320	5.63	3.32	0.59	1386	5.40	3.19	0.59	1452
23	20	6.13	2.88	0.47	1386	5.88	2.76	0.47	1469	5.70	2.68	0.47	1502
23	22	6.38	2.23	0.35	1436	6.15	2.15	0.35	1526	6.00	2.10	0.35	1568
24	18	5.88	3.70	0.63	1320	5.63	3.54	0.63	1386	5.40	3.40	0.63	1452
24	20	6.13	3.12	0.51	1386	5.88	3.00	0.51	1469	5.70	2.91	0.51	1502
24	22	6.38	2.49	0.39	1436	6.15	2.40	0.39	1526	6.00	2.34	0.39	1568
24	24	6.70	1.81	0.27	1502	6.45	1.74	0.27	1584	6.30	1.70	0.27	1634
25	18	5.88	3.94	0.67	1320	5.63	3.77	0.67	1386	5.40	3.62	0.67	1452
25	20	6.13	3.37	0.55	1386	5.88	3.23	0.55	1469	5.70	3.14	0.55	1502
25	22	6.38	2.74	0.43	1436	6.15	2.64	0.43	1526	6.00	2.58	0.43	1568
25	24	6.70	2.08	0.31	1502	6.45	2.00	0.31	1584	6.30	1.95	0.31	1634
26	18	5.88	4.17	0.71	1320	5.63	3.99	0.71	1386	5.40	3.83	0.71	1452
26	20	6.13	3.61	0.59	1386	5.88	3.47	0.59	1469	5.70	3.36	0.59	1502
26	22	6.38	3.00	0.47	1436	6.15	2.89	0.47	1526	6.00	2.82	0.47	1568
26	24	6.70	2.35	0.35	1502	6.45	2.26	0.35	1584	6.30	2.21	0.35	1634
26	26	6.90	1.59	0.23	1584	6.70	1.54	0.23	1667	6.60	1.52	0.23	1716
27	18	5.88	4.41	0.75	1320	5.63	4.22	0.75	1386	5.40	4.05	0.75	1452
27	20	6.13	3.86	0.63	1386	5.88	3.70	0.63	1469	5.70	3.59	0.63	1502
27	22	6.38	3.25	0.51	1436	6.15	3.14	0.51	1526	6.00	3.06	0.51	1568
27	24	6.70	2.61	0.39	1502	6.45	2.52	0.39	1584	6.30	2.46	0.39	1634
27	26	6.90	1.86	0.27	1584	6.70	1.81	0.27	1667	6.60	1.78	0.27	1716
28	18	5.88	4.64	0.79	1320	5.63	4.44	0.79	1386	5.40	4.27	0.79	1452
28	20	6.13	4.10	0.67	1386	5.88	3.94	0.67	1469	5.70	3.82	0.67	1502
28	22	6.38	3.51	0.55	1436	6.15	3.38	0.55	1526	6.00	3.30	0.55	1568
28	24	6.70	2.88	0.43	1502	6.45	2.77	0.43	1584	6.30	2.71	0.43	1634
28	26	6.90	2.14	0.31	1584	6.70	2.08	0.31	1667	6.60	2.05	0.31	1716
29	18	5.88	4.88	0.83	1320	5.63	4.67	0.83	1386	5.40	4.48	0.83	1452
29	20	6.13	4.35	0.71	1386	5.88	4.17	0.71	1469	5.70	4.05	0.71	1502
29	22	6.38	3.76	0.59	1436	6.15	3.63	0.59	1526	6.00	3.54	0.59	1568
29	24	6.70	3.15	0.47	1502	6.45	3.03	0.47	1584	6.30	2.96	0.47	1634
29	26	6.90	2.42	0.35	1584	6.70	2.35	0.35	1667	6.60	2.31	0.35	1716
30	18	5.88	5.11	0.87	1320	5.63	4.89	0.87	1386	5.40	4.70	0.87	1452
30	20	6.13	4.59	0.75	1386	5.88	4.41	0.75	1469	5.70	4.28	0.75	1502
30	22	6.38	4.02	0.63	1436	6.15	3.87	0.63	1526	6.00	3.78	0.63	1568
30	24	6.70	3.42	0.51	1502	6.45	3.29	0.51	1584	6.30	3.21	0.51	1634
30	26	6.90	2.69	0.39	1584	6.70	2.61	0.39	1667	6.60	2.57	0.39	1716
31	18	5.88	5.35	0.91	1320	5.63	5.12	0.91	1386	5.40	4.91	0.91	1452
31	20	6.13	4.84	0.79	1386	5.88	4.64	0.79	1469	5.70	4.50	0.79	1502
31	22	6.38	4.27	0.67	1436	6.15	4.12	0.67	1526	6.00	4.02	0.67	1568
31	24	6.70	3.69	0.55	1502	6.45	3.55	0.55	1584	6.30	3.47	0.55	1634
31	26	6.90	2.97	0.43	1584	6.70	2.88	0.43	1667	6.60	2.84	0.43	1716
32	18	5.88	5.58	0.95	1320	5.63	5.34	0.95	1386	5.40	5.13	0.95	1452
32	20	6.13	5.08	0.83	1386	5.88	4.88	0.83	1469	5.70	4.73	0.83	1502
32	22	6.38	4.53	0.71	1436	6.15	4.37	0.71	1526	6.00	4.26	0.71	1568
32	24	6.70	3.95	0.59	1502	6.45	3.81	0.59	1584	6.30	3.72	0.59	1634
32	26	6.90	3.24	0.47	1584	6.70	3.15	0.47	1667	6.60	3.10	0.47	1716

NOTE Q : Total capacity (kW)

SHF : Sensible heat factor

DB : Dry-bulb temperature

SHC : Sensible heat capacity (kW)

INPUT : Total power input (W)

WB : Wet-bulb temperature

PERFORMANCE DATA COOL operation at Rated frequency

MSZ-GB50VA : MUZ-GB50VA

CAPACITY:5.0(kW) SHF:0.69 INPUT:1650(W)

INDOOR DB(°C)	INDOOR WB(°C)	OUTDOOR DB(°C)											
		35				40				43			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	4.90	2.50	0.51	1617	4.50	2.30	0.51	1716	4.30	2.19	0.51	1749
21	20	5.15	2.01	0.39	1683	4.80	1.87	0.39	1766	4.60	1.79	0.39	1815
22	18	4.90	2.70	0.55	1617	4.50	2.48	0.55	1716	4.30	2.37	0.55	1749
22	20	5.15	2.21	0.43	1683	4.80	2.06	0.43	1766	4.60	1.98	0.43	1815
22	22	5.45	1.69	0.31	1749	5.10	1.58	0.31	1848	4.90	1.52	0.31	1881
23	18	4.90	2.89	0.59	1617	4.50	2.66	0.59	1716	4.30	2.54	0.59	1749
23	20	5.15	2.42	0.47	1683	4.80	2.26	0.47	1766	4.60	2.16	0.47	1815
23	22	5.45	1.91	0.35	1749	5.10	1.79	0.35	1848	4.90	1.72	0.35	1881
24	18	4.90	3.09	0.63	1617	4.50	2.84	0.63	1716	4.30	2.71	0.63	1749
24	20	5.15	2.63	0.51	1683	4.80	2.45	0.51	1766	4.60	2.35	0.51	1815
24	22	5.45	2.13	0.39	1749	5.10	1.99	0.39	1848	4.90	1.91	0.39	1881
24	24	5.75	1.55	0.27	1815	5.40	1.46	0.27	1898	5.25	1.42	0.27	1947
25	18	4.90	3.28	0.67	1617	4.50	3.02	0.67	1716	4.30	2.88	0.67	1749
25	20	5.15	2.83	0.55	1683	4.80	2.64	0.55	1766	4.60	2.53	0.55	1815
25	22	5.45	2.34	0.43	1749	5.10	2.19	0.43	1848	4.90	2.11	0.43	1881
25	24	5.75	1.78	0.31	1815	5.40	1.67	0.31	1898	5.25	1.31	0.25	1947
26	18	4.90	3.48	0.71	1617	4.50	3.20	0.71	1716	4.30	3.05	0.71	1749
26	20	5.15	3.04	0.59	1683	4.80	2.83	0.59	1766	4.60	2.71	0.59	1815
26	22	5.45	2.56	0.47	1749	5.10	2.40	0.47	1848	4.90	2.30	0.47	1881
26	24	5.75	2.01	0.35	1815	5.40	1.89	0.35	1898	5.25	1.21	0.23	1947
26	26	6.05	1.39	0.23	1881	5.70	1.31	0.23	1964	5.50	1.27	0.23	2013
27	18	4.90	3.68	0.75	1617	4.50	3.38	0.75	1716	4.30	3.23	0.75	1749
27	20	5.15	3.24	0.63	1683	4.80	3.02	0.63	1766	4.60	2.90	0.63	1815
27	22	5.45	2.78	0.51	1749	5.10	2.60	0.51	1848	4.90	2.50	0.51	1881
27	24	5.75	2.24	0.39	1815	5.40	2.11	0.39	1898	5.25	1.10	0.21	1947
27	26	6.05	1.63	0.27	1881	5.70	1.54	0.27	1964	5.50	1.49	0.27	2013
28	18	4.90	3.87	0.79	1617	4.50	3.56	0.79	1716	4.30	3.40	0.79	1749
28	20	5.15	3.45	0.67	1683	4.80	3.22	0.67	1766	4.60	3.08	0.67	1815
28	22	5.45	3.00	0.55	1749	5.10	2.81	0.55	1848	4.90	2.70	0.55	1881
28	24	5.75	2.47	0.43	1815	5.40	2.32	0.43	1898	5.25	1.00	0.19	1947
28	26	6.05	1.88	0.31	1881	5.70	1.77	0.31	1964	5.50	1.71	0.31	2013
29	18	4.90	4.07	0.83	1617	4.50	3.74	0.83	1716	4.30	3.57	0.83	1749
29	20	5.15	3.66	0.71	1683	4.80	3.41	0.71	1766	4.60	3.27	0.71	1815
29	22	5.45	3.22	0.59	1749	5.10	3.01	0.59	1848	4.90	2.89	0.59	1881
29	24	5.75	2.70	0.47	1815	5.40	2.54	0.47	1898	5.25	0.89	0.17	1947
29	26	6.05	2.12	0.35	1881	5.70	2.00	0.35	1964	5.50	1.93	0.35	2013
30	18	4.90	4.26	0.87	1617	4.50	3.92	0.87	1716	4.30	3.74	0.87	1749
30	20	5.15	3.86	0.75	1683	4.80	3.60	0.75	1766	4.60	3.45	0.75	1815
30	22	5.45	3.43	0.63	1749	5.10	3.21	0.63	1848	4.90	3.09	0.63	1881
30	24	5.75	2.93	0.51	1815	5.40	2.75	0.51	1898	5.25	0.79	0.15	1947
30	26	6.05	2.36	0.39	1881	5.70	2.22	0.39	1964	5.50	2.15	0.39	2013
31	18	4.90	4.46	0.91	1617	4.50	4.10	0.91	1716	4.30	3.91	0.91	1749
31	20	5.15	4.07	0.79	1683	4.80	3.79	0.79	1766	4.60	3.63	0.79	1815
31	22	5.45	3.65	0.67	1749	5.10	3.42	0.67	1848	4.90	3.28	0.67	1881
31	24	5.75	3.16	0.55	1815	5.40	2.97	0.55	1898	5.25	0.68	0.13	1947
31	26	6.05	2.60	0.43	1881	5.70	2.45	0.43	1964	5.50	2.37	0.43	2013
32	18	4.90	4.66	0.95	1617	4.50	4.28	0.95	1716	4.30	4.09	0.95	1749
32	20	5.15	4.27	0.83	1683	4.80	3.98	0.83	1766	4.60	3.82	0.83	1815
32	22	5.45	3.87	0.71	1749	5.10	3.62	0.71	1848	4.90	3.48	0.71	1881
32	24	5.75	3.39	0.59	1815	5.40	3.19	0.59	1898	5.25	0.58	0.11	1947
32	26	6.05	2.84	0.47	1881	5.70	2.68	0.47	1964	5.50	2.59	0.47	2013

NOTE Q : Total capacity (kW)
SHC : Sensible heat capacity (kW)

SHF : Sensible heat factor
INPUT : Total power input (W)

DB : Dry-bulb temperature
WB : Wet-bulb temperature

PERFORMANCE DATA HEAT operation at Rated frequency

MSZ-GB50VA : MUZ-GB50VA

CAPACITY:5.8(kW) INPUT:1700(W)

INDOOR DB(°C)	OUTDOOR WB(°C)													
	-10		-5		0		5		10		15		20	
Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	
15	3.65	1105	4.41	1326	5.16	1496	5.92	1615	6.67	1717	7.37	1768	8.12	1802
21	3.48	1190	4.18	1411	4.93	1564	5.63	1683	6.38	1768	7.08	1819	7.80	1887
26	3.13	1275	3.89	1496	4.58	1649	5.34	1768	6.09	1853	6.79	1904	7.54	1955

NOTE Q : Total capacity (kW) INPUT : Total power input (W) DB : Dry-bulb temperature WB : Wet-bulb temperature

9

ACTUATOR CONTROL

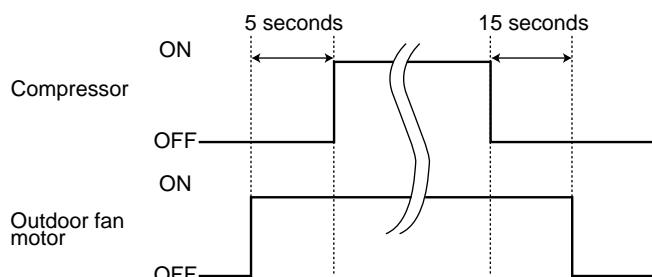
MUZ-GB50VA

9-1. Outdoor fan motor control

The fan motor turns ON/OFF, interlocking with the compressor.

[ON] The fan motor turns ON 5 seconds before the compressor starts up.

[OFF] The fan motor turns OFF 15 seconds after the compressor has stopped running.



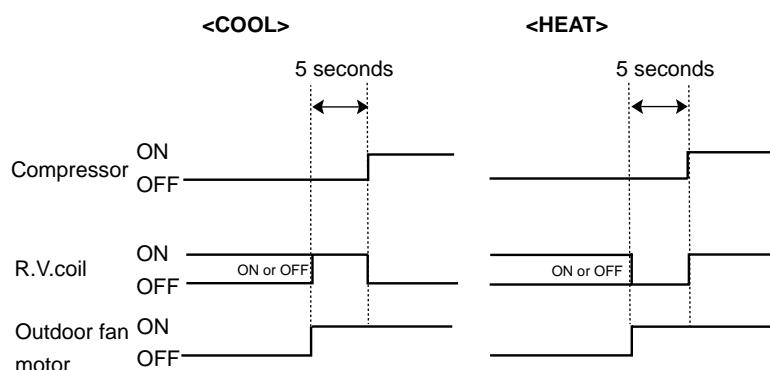
9-2. R.V. coil control

Heating ON

Cooling OFF

Dry OFF

NOTE: The 4-way valve reverses for 5 seconds right before start-up of the compressor.



9-3. Relation between main sensor and actuator

Sensor	Purpose	Actuator			
		Compressor	LEV	Outdoor fan motor	R.V. coil
Discharge temperature thermistor	Protection	<input type="radio"/>	<input type="radio"/>		
Indoor pipe temperature thermistor	Defrosting Protection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Defrost thermistor	Defrosting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fin temperature thermistor	Protection	<input type="radio"/>		<input type="radio"/>	
Outdoor heat exchanger temperature	Protection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Ambient temperature thermistor	Protection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

10 TROUBLESHOOTING

MUZ-GB50VA

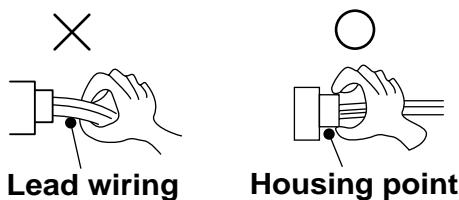
10-1. Cautions on troubleshooting

1. Before troubleshooting, check the following

- 1) Check the power supply voltage.
- 2) Check the indoor/outdoor connecting wire for miswiring.

2. Take care of the following during servicing

- 1) Before servicing the air conditioner, be sure to turn OFF the main unit first with the remote controller, then after confirming the horizontal vane is closed, turn off the breaker and / or disconnect the power plug.
- 2) Be sure to turn OFF the power supply before removing the front panel, the cabinet, the top panel, and the electronic control P.C. board.
- 3) When removing the electrical parts, be careful to the residual voltage of smoothing capacitor.
- 4) When removing the electronic control P.C. board, hold the edge of the board with care NOT to apply stress on the components.
- 5) When connecting or disconnecting the connectors, hold the housing of the connector. DO NOT pull the lead wires.



3. Troubleshooting procedure

- 1) First, check if the OPERATION INDICATOR lamp on the indoor unit is flashing on and off to indicate an abnormality. To make sure, check how many times the abnormality indication is flashing on and off before starting service work.
- 2) Before servicing check that the connector and terminal are connected properly.
- 3) When the electronic control P.C. board seems to be defective, check the copper foil pattern for disconnection and the components for bursting and discoloration.
- 4) When troubleshooting, refer to 10-2., 10-3. and 10-4.

10-2. Failure mode recall function

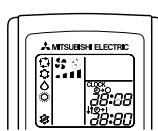
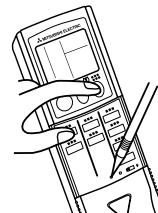
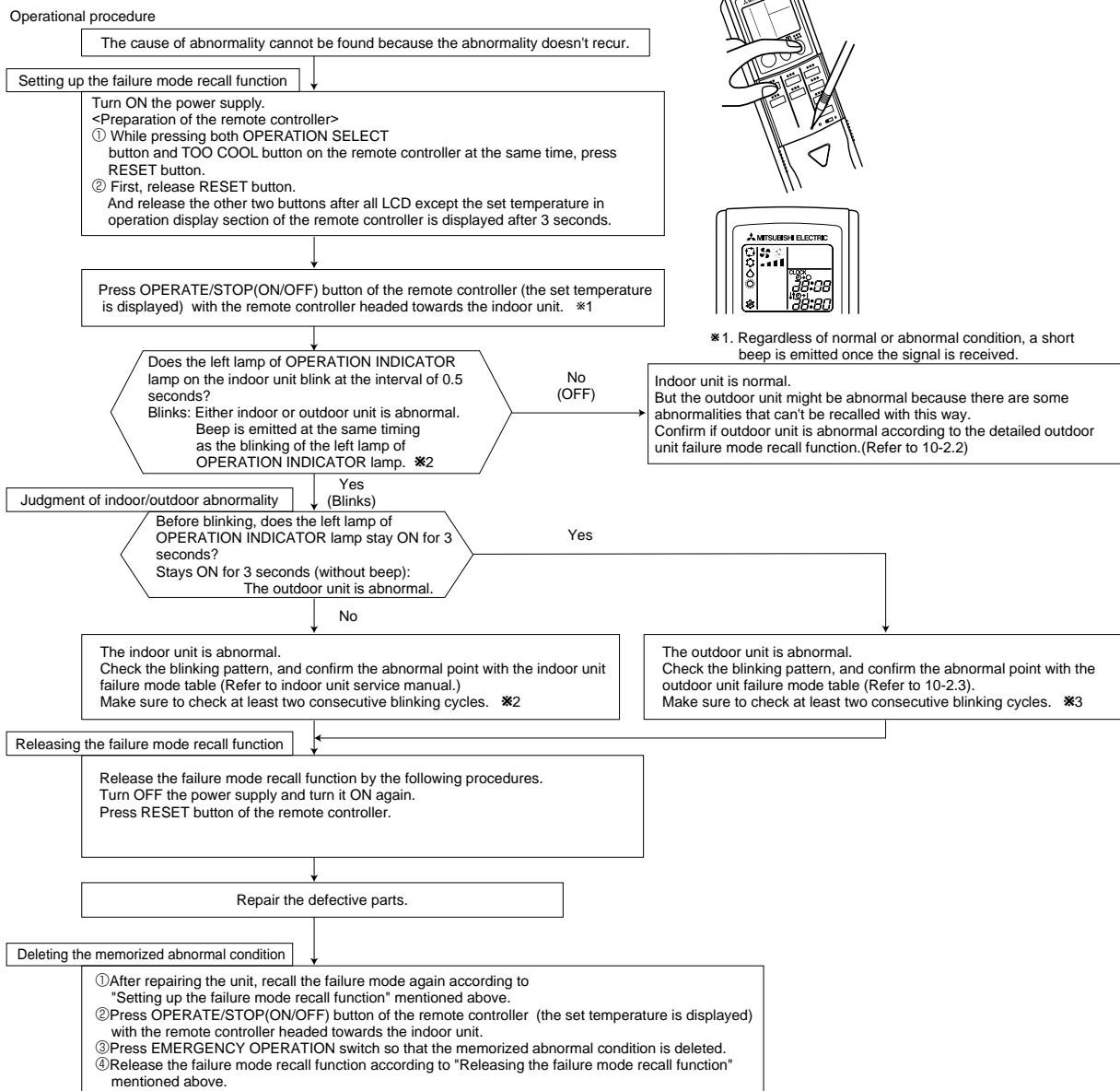
Outline of the function

This air conditioner can memorize the abnormal condition which has occurred once.

Even though LED indication listed on the troubleshooting check table (10-4.) disappears, the memorized failure details can be recalled.

This mode is very useful when the unit needs to be repaired for the abnormality which doesn't recur.

1. Flow chart of failure mode recall function for the indoor/outdoor unit



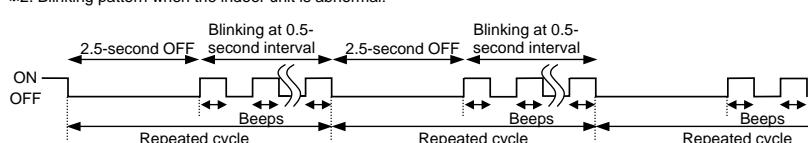
*1. Regardless of normal or abnormal condition, a short beep is emitted once the signal is received.

Indoor unit is normal.
But the outdoor unit might be abnormal because there are some abnormalities that can't be recalled with this way.
Confirm if outdoor unit is abnormal according to the detailed outdoor unit failure mode recall function.(Refer to 10-2.2)

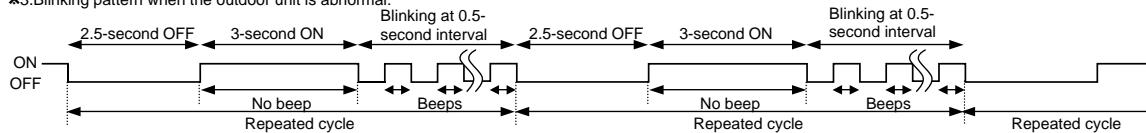
Note1. Make sure to release the failure mode recall function once it's set up, otherwise the unit cannot operate properly.

2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

*2. Blinking pattern when the indoor unit is abnormal:

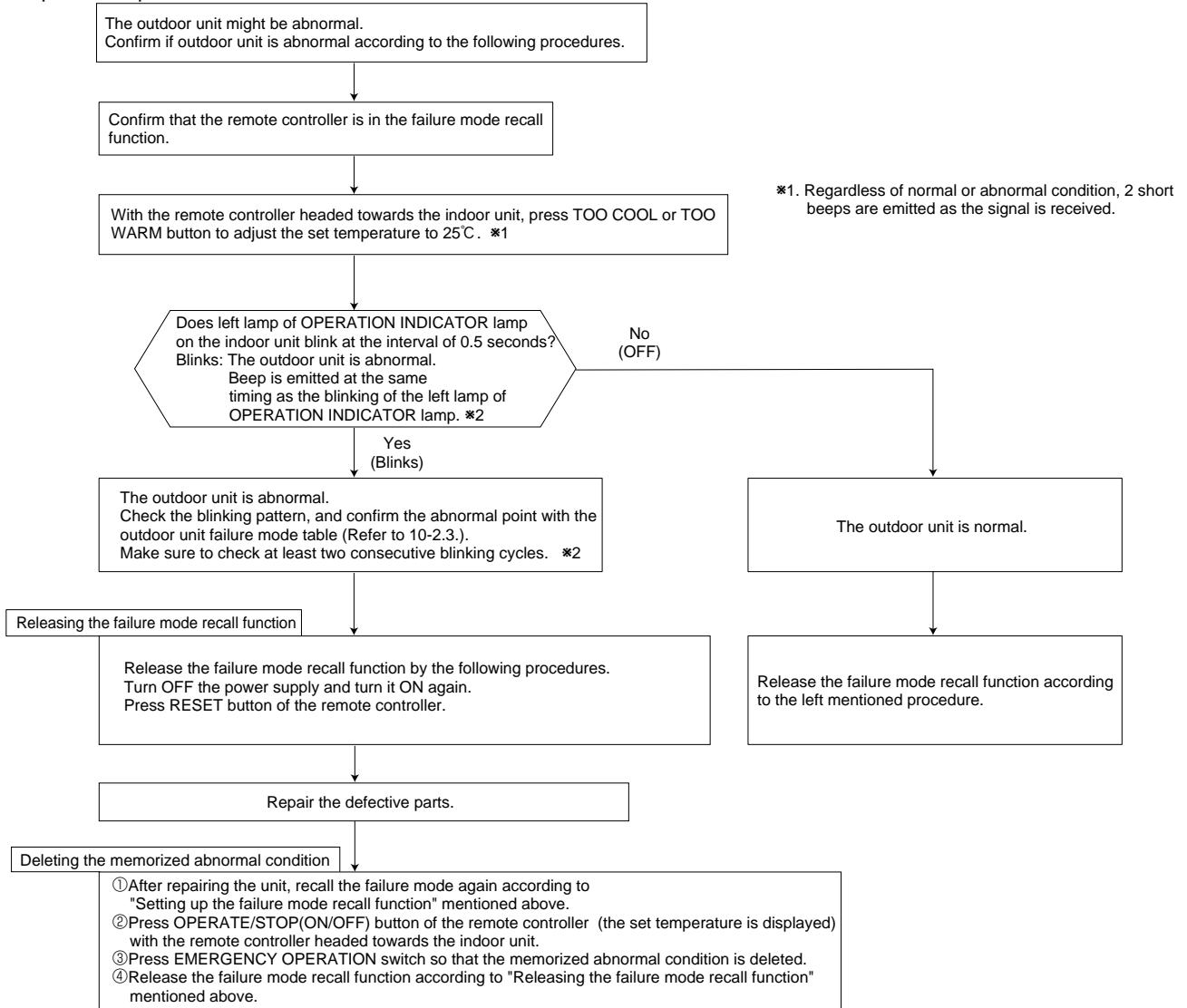


*3. Blinking pattern when the outdoor unit is abnormal:



2. Flow chart of the detailed outdoor unit failure mode recall function

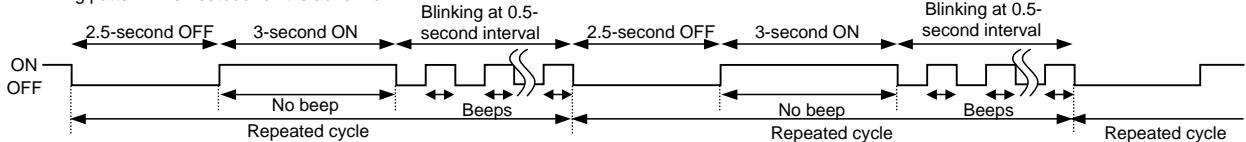
Operational procedure



Note1. Make sure to release the failure mode recall function once it's set up, otherwise the unit cannot operate properly.

2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

*2.Blinking pattern when outdoor unit is abnormal:



3. Outdoor unit failure mode table

MUZ-GB50VA

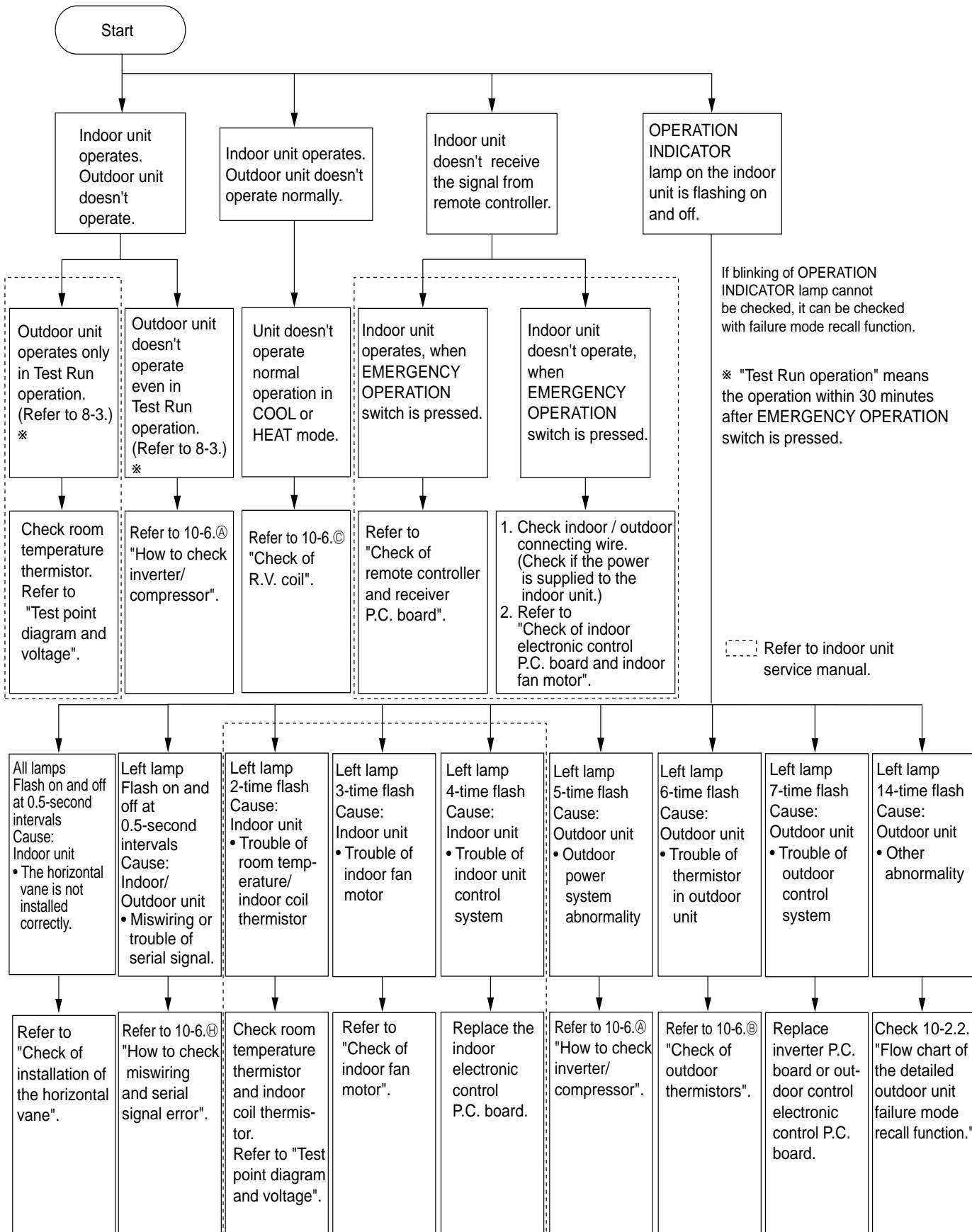
The left lamp of OPERATION INDICATOR lamp (Indoor unit)	Abnormal point (Failure mode / protection)	LED indication (Outdoor P.C. board)		Condition	Correspondence	Indoor/outdoor unit failure mode recall function
		LED 1	LED 2			
OFF	None (Normal)	—	—	—	—	—
2-time flash	Outdoor power system	Lighting	Lighting	Overcurrent protection stop is continuously performed 3 times within 1 minute after the compressor gets started, or converter protection stop or bus-bar voltage protection stop is continuously performed 3 times within 3 minutes after start-up.	<ul style="list-style-type: none"> Check the connection of the compressor connecting wire. Refer to 10-6.⑧ "How to check inverter / compressor". Check the stop valve. 	○
3-time flash	Discharge temperature thermistor	Lighting	Once	Thermistor shorts or opens during compressor running.	<ul style="list-style-type: none"> Refer to 10-6.⑧ "Check of outdoor thermistors". 	○
	Defrost thermistor	Lighting	Once			
	Ambient temperature thermistor	Lighting	Twice			
	Fin temperature thermistor	Lighting	3 times			
	P.C. board temperature thermistor	Lighting	4 times		<ul style="list-style-type: none"> Replace the outdoor electronic control P.C. board. 	
	Outdoor heat exchanger temperature thermistor	Lighting	9 times		<ul style="list-style-type: none"> Refer to 10-6.⑧ "Check of outdoor thermistors". 	
4-time flash	Overcurrent	Once	Goes out	28A current flows into intelligent power module.	<ul style="list-style-type: none"> Reconnect compressor connector. Refer to 10-6.⑧ "How to check inverter/ compressor." Check the stop valve. 	—
5-time flash	Discharge temperature	Lighting	Lighting	Discharge temperature exceeds 116°C during operation. Compressor can restart if discharge temperature thermistor reads 100°C or less 3 minutes later.	<ul style="list-style-type: none"> Check refrigerant circuit and refrigerant amount. Refer to 10-6.⑧ "Check of LEV". 	—
6-time flash	High pressure	Lighting	Lighting	The outdoor heat exchanger temperature exceeds 70°C during cooling or the indoor gas pipe temperature exceeds 70°C during heating.	<ul style="list-style-type: none"> Check refrigerant circuit and refrigerant amount. Check the stop valve. 	—
7-time flash	Fin temperature	3 times	Goes out	The fin temperature exceeds 87°C during operation.	<ul style="list-style-type: none"> Check around outdoor unit. Check outdoor unit air passage. Refer to 10-6.⑧ "Check of outdoor fan motor". 	—
	P.C. board temperature	4 times	Goes out	The P.C. board temperature exceeds 70°C during operation.		
8-time flash	Outdoor fan motor	Lighting	Lighting	Failure occurs continuously 3 times within 30 seconds after the fan gets started.	<ul style="list-style-type: none"> Refer to 10-6.⑧ "Check of outdoor fan motor". 	—
9-time flash	Nonvolatile memory data	Lighting	5 times	Nonvolatile memory data cannot be read properly.	<ul style="list-style-type: none"> Replace the outdoor electronic control P.C. board. 	○
10-time flash	Discharge temperature	Lighting	Lighting	The frequency of the compressor is kept 80Hz or more and the discharge temperature is kept under 39°C for more than 20 minutes.	<ul style="list-style-type: none"> Check refrigerant circuit and refrigerant amount. Refer to 10-6.⑧ "Check of LEV". 	—

NOTE : Blinking patterns of this mode differ from the ones of Troubleshooting check table (10-4.).

The left lamp of OPERATION INDICATOR lamp (Indoor unit)	Abnormal point (Failure mode / protection)	LED indication (Outdoor P.C. board)		Condition	Correspondence	Indoor/outdoor unit failure mode recall function
		LED 1	LED 2			
11-time flash	Communication error between P.C. boards	Lighting	6 times	Communication error occurs between the electronic control P.C. board and power board for more than 10 seconds.	• Check the connecting wire between outdoor electronic control P.C. board and power board.	—
				The communication between boards protection stop is continuously performed twice.		○
	Current sensor	Lighting	7 times	A short or open circuit is detected in the current sensor during compressor operating.	• Replace the power board.	—
				Current sensor protection stop is continuously performed twice.		○
	Zero cross detecting circuit	5 times	Goes out	Zero cross signal cannot be detected while the compressor is operating.	• Check the connecting wire among electronic control P.C. board, noise filter P.C. board and power board.	—
				The protection stop of the zero cross detecting circuit is continuously performed 10 times.		○
	Converter	5 times	Goes out	A failure is detected in the operation of the converter during operation.	• Replace the power board.	—
	Bus-bar voltage (1)	5 times	Goes out	The bus-bar voltage exceeds 400V or falls to 200V or below during compressor operating.		—
	Bus-bar voltage (2) *Even if this protection stop is performed continuously 3 times, it does not mean the abnormality in outdoor power system.	6 times	Goes out	The bus-bar voltage exceeds 400V or falls to 50V or below during compressor operating.		

NOTE : Blinking patterns of this mode differ from the ones of Troubleshooting check table (10-4.).

10-3. Instruction of troubleshooting



10-4. Troubleshooting check table

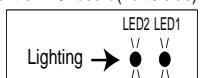
MUZ-GB50VA

No.	Symptom	Indication		Abnormal point / Condition	Condition	Correspondence
		LED1(Red)	LED2(Yellow)			
1	Outdoor unit does not operate.	Lightning	Twice	Outdoor power system	Overcurrent protection stop is continuously performed 3 times within 1 minute after the compressor gets started, or when converter protection stop or bus-bar voltage protection stop is continuously performed 3 times within 3 minutes after start-up.	<ul style="list-style-type: none"> Check the connection of the compressor connecting wire. Refer to 10-6.⑧ "How to check inverter/compressor". Check the stop valve.
2		Lightning	3 times	Discharge temperature thermistor	A short circuit is detected in the thermistor during operation, or an open circuit is detected in the thermistor after 10 minutes of compressor start-up.	<ul style="list-style-type: none"> Refer to 10-6.⑧ "Check of outdoor thimistors".
3		Lightning	4 times	Fin temperature thermistor	A short or open circuit is detected in the thermistor during operation.	<ul style="list-style-type: none"> Refer to 10-6.⑧ "Check of outdoor thimistors". Replace the outdoor electronic control P.C. board.
4				P.C board temperature thermistor		
5		Lightning	5 times	Ambient temperature thermistor	A short or open circuit is detected in the thermistor during operation.	<ul style="list-style-type: none"> Refer to 10-6.⑧ "Check of outdoor thimistors".
6				Outdoor heat exchanger temperature thermistor	A short circuit is detected in the thermistor during operation, or an open circuit is detected in the thermistor after 5 minutes (in cooling) and 10 minutes (in heating) of compressor start-up.	
7				Defrost thermistor	A short circuit is detected in the thermistor during operation, or an open circuit is detected in the thermistor after 5 minutes of compressor start-up.	
8		Lightning	6 times	Serial signal	The communication fails between the indoor and outdoor unit for 3 minutes.	<ul style="list-style-type: none"> Refer to 10-6.⑧ "How to check miswiring and serial signal error".
9		Lightning	7 times	Nonvolatile memory data	The nonvolatile memory data cannot be read properly.	<ul style="list-style-type: none"> Replace the outdoor electronic control P.C. board.
10		Lightning	8 times	Current sensor	Current sensor protection stop is continuously performed twice.	<ul style="list-style-type: none"> Replace the power board.
11				Communication error between P.C. boards	The communication protection stop between boards is continuously performed twice.	<ul style="list-style-type: none"> Check the connecting wire between outdoor electronic control P.C. board and power board.
12		Lightning	11 times	Zero cross detecting circuit	The protection stop of the zero cross detecting circuit is continuously performed 10 times.	<ul style="list-style-type: none"> Check the connecting wire among outdoor electronic control P.C. board, noise filter P.C. board and power board.
13				'Outdoor unit stops and restarts 3 minutes later' is repeated.	<p>IPM protection Overcurrent is detected after 30 minutes of compressor start-up.</p> <p>Lock protection Overcurrent is detected within 30 minutes of compressor start-up.</p>	<ul style="list-style-type: none"> Reconnect compressor connector. Refer to 10-6.⑧ "How to check inverter/compressor". Check the stop valve. Check the power module (PAM module).
14		Lightning	12 times	Twice		<ul style="list-style-type: none"> Check the amount of gas and refrigerant circuit. Refer to 10-6.⑧ "Check of LEV".
15				Goes out	<p>Discharge temperature protection The discharge temperature exceeds 116°C during operation and compressor stops. Compressor can restart if discharge temperature thermistor reads 100°C or less 3 minutes later.</p> <p>Fin temperature protection The fin temperature exceeds 87°C during operation.</p> <p>P.C. board temperature protection The P.C. board temperature exceeds 70°C during operation.</p>	<ul style="list-style-type: none"> Check refrigerant circuit and refrigerant amount. Refer to 10-6.⑧ "Check of outdoor fan motor".
16		Lightning	5 times	Goes out	High-pressure protection The outdoor heat exchanger temperature exceeds 70°C during cooling or indoor gas pipe temperature exceeds 70°C during heating.	<ul style="list-style-type: none"> Check the amount of gas and the refrigerant circuit. Check stop valve.
17				Goes out	Converter protection A failure is detected in the operation of the converter during operation.	<ul style="list-style-type: none"> Replace the power board.
18		Lightning	8 times	Goes out	Bus-bar voltage protection (1) The bus-bar voltage exceeds 400V or falls to 200V or below during compressor operating.	<ul style="list-style-type: none"> Replace the power board.
19				Goes out	Bus-bar voltage protection (2) The bus-bar voltage exceeds 400V or falls to 50V or below during compressor operating.	
20		Lightning	13 times	Goes out	Outdoor fan motor Failure occurs continuously 3 times within 30 seconds after the fan gets started.	<ul style="list-style-type: none"> Refer to 10-6.⑧ "Check of outdoor fan motor".
21		Lightning	8 times	Goes out	Current sensor protection A short or open circuit is detected in the current sensor during compressor operating.	<ul style="list-style-type: none"> Replace the power board.
22		Lightning	11 times	Goes out	Communication between P.C. boards protection Communication error occurs between the outdoor electronic control P.C. board and power board for more than 10 seconds.	<ul style="list-style-type: none"> Check the connecting wire between outdoor electronic control P.C. board and power board.
23		Lightning	12 times	Goes out	Zero cross detecting circuit protection Zero cross signal cannot be detected while the compressor is operating.	<ul style="list-style-type: none"> Check the connecting wire among outdoor electronic control P.C. board, noise filter P.C. board and power board.

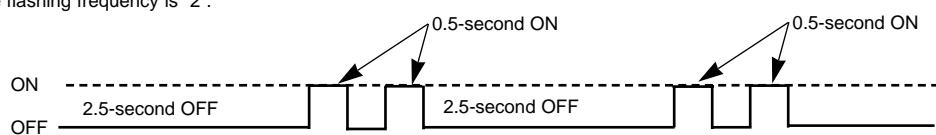
NOTE 1. The location of LED is illustrated at the right figure. Refer to 10-7.1.

2. LED is lighted during normal operation.

Outdoor electronic control P.C. board(Parts side)



The flashing frequency shows the number of times the LED blinks after every 2.5-second OFF.
(Example) When the flashing frequency is "2".





No.	Symptom	Indication		Abnormal point / Condition	Condition	Correspondence
		LED1(Red)	LED2(Yellow)			
20	Outdoor unit operates.	Once	Lighting	Primary current protection	The input current exceeds 15A.	These symptoms do not mean any abnormality of the product, but check the following points. • Check if indoor filters are clogged. • Check if refrigerant is short. • Check if indoor/outdoor unit air circulation is short cycled.
21				Secondary current protection	The current of the compressor exceeds 15A.	
22		Twice	Lighting	High-pressure protection	The indoor gas pipe temperature exceeds 45°C during heating.	• Check refrigerant circuit and refrigerant amount. • Refer to 10-6.⑥ "Check of LEV". • Refer to 10-6.⑦ "Check of outdoor thermistors".
23				Defrosting in cooling	The indoor gas pipe temperature falls 3°C or below during cooling.	
24		3 times	Lighting	Discharge temperature protection	The discharge temperature exceeds 100°C during operation.	• Refer to 10-6.⑥ "Check of LEV". • Check refrigerant circuit and refrigerant amount.
25				Low discharge temperature protection	The frequency of the compressor is kept 80Hz or more and the discharge temperature is kept under 39°C for more than 20 minutes.	
26	Outdoor unit operates	4 times	Lighting	Cooling high-pressure protection	The outdoor heat exchanger temperature exceeds 58°C during operation.	This symptom does not mean any abnormality of the product, but check the following points. • Check if indoor filters are clogged. • Check if refrigerant is short. • Check if indoor/outdoor unit air circulation is short cycled.
25				Inverter check mode	The unit is operated with emergency operation switch.	—
26		Lighting	Lighting	Normal	—	—

10-5. Trouble criterion of main parts

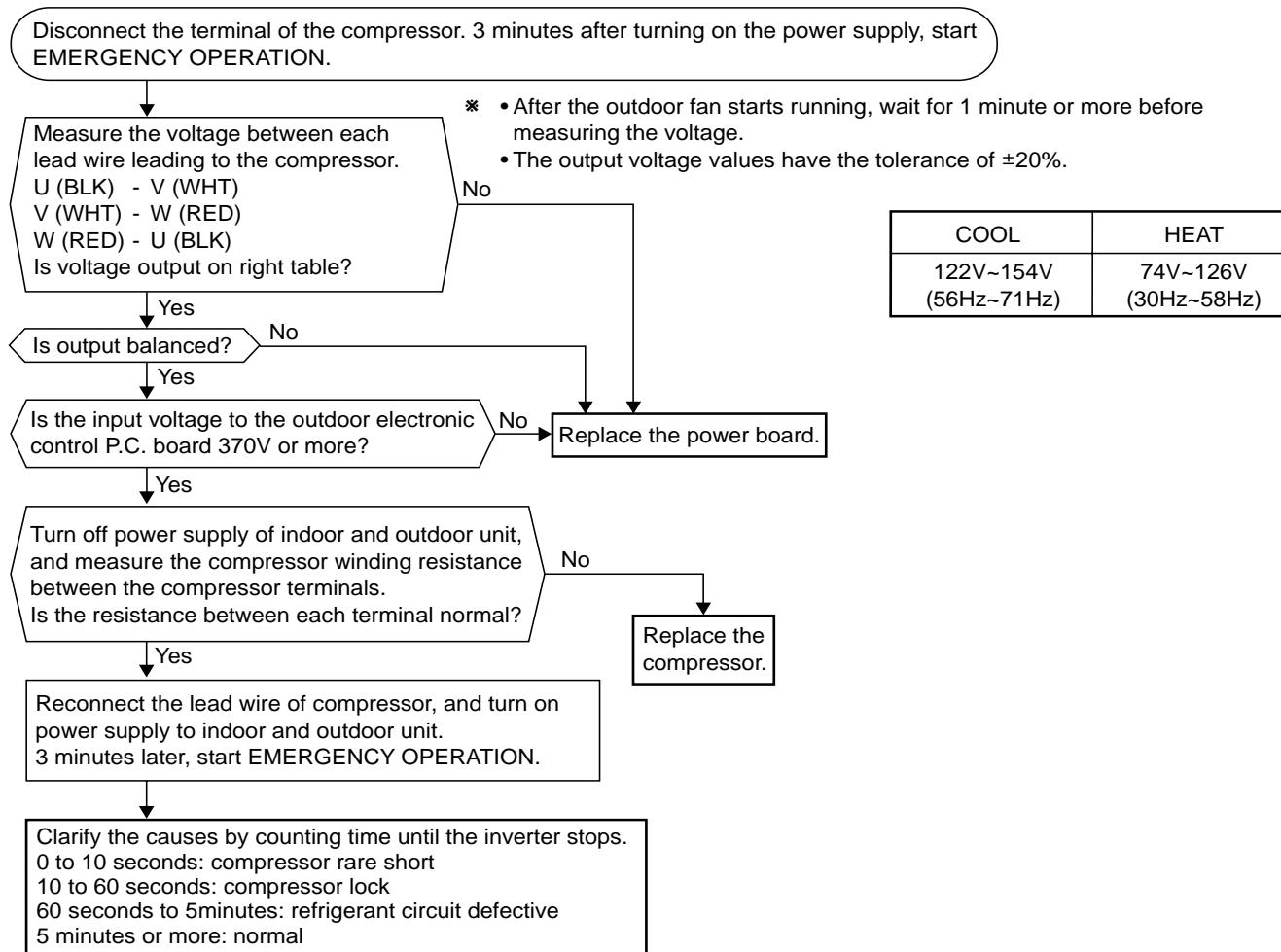
MUZ-GB50VA

Part name	Check method and criterion	Figure							
Defrost thermistor (RT61)	Measure the resistance with a tester.								
Ambient temperature thermistor (RT65)	Refer to 10-7. "Test point diagram and voltage", 1. "Outdoor electronic control P.C. board", the chart of thermistor.								
Outdoor heat exchanger temperature thermistor (RT68)									
Discharge temperature thermistor (RT62)	Measure the resistance with a tester. Before measurement, hold the thermistor with your hands to warm it up.								
Fin temperature thermistor (RT64)	Refer to 10-7. "Test point diagram and voltage", 1. "Outdoor electronic control P.C. board", the chart of thermistor.								
Compressor	Measure the resistance between terminals using a tester. (Winding temperature : -10 °C ~ 40 °C)	<table border="1"> <tr> <td>Normal</td> </tr> <tr> <td>0.40 Ω ~ 0.49 Ω</td> </tr> </table>	Normal	0.40 Ω ~ 0.49 Ω					
Normal									
0.40 Ω ~ 0.49 Ω									
Outdoor fan motor	Measure the resistance between lead wires using a tester. (Part temperature : -10 °C ~ 40 °C)	<table border="1"> <tr> <td>Color of lead wire</td> <td>Normal</td> </tr> <tr> <td>RED - BLK</td> <td rowspan="3">13.4 Ω ~ 16.4 Ω</td> </tr> <tr> <td>BLK - WHT</td> </tr> <tr> <td>WHT - RED</td> </tr> </table>	Color of lead wire	Normal	RED - BLK	13.4 Ω ~ 16.4 Ω	BLK - WHT	WHT - RED	
Color of lead wire	Normal								
RED - BLK	13.4 Ω ~ 16.4 Ω								
BLK - WHT									
WHT - RED									
R. V. coil	Measure the resistance using a tester. (Part temperature : -10 °C ~ 40 °C)								
Linear expansion valve	Measure the resistance using a tester.(Part temperature : -10 °C ~ 40 °C)	<table border="1"> <tr> <td>Color of lead wire</td> <td>Normal</td> </tr> <tr> <td>WHT - RED</td> <td rowspan="4">37.4 Ω ~ 53.9 Ω</td> </tr> <tr> <td>RED - ORN</td> </tr> <tr> <td>YLW - BRN</td> </tr> <tr> <td>BRN - BLU</td> </tr> </table>	Color of lead wire	Normal	WHT - RED	37.4 Ω ~ 53.9 Ω	RED - ORN	YLW - BRN	BRN - BLU
Color of lead wire	Normal								
WHT - RED	37.4 Ω ~ 53.9 Ω								
RED - ORN									
YLW - BRN									
BRN - BLU									

10-6. Troubleshooting flow

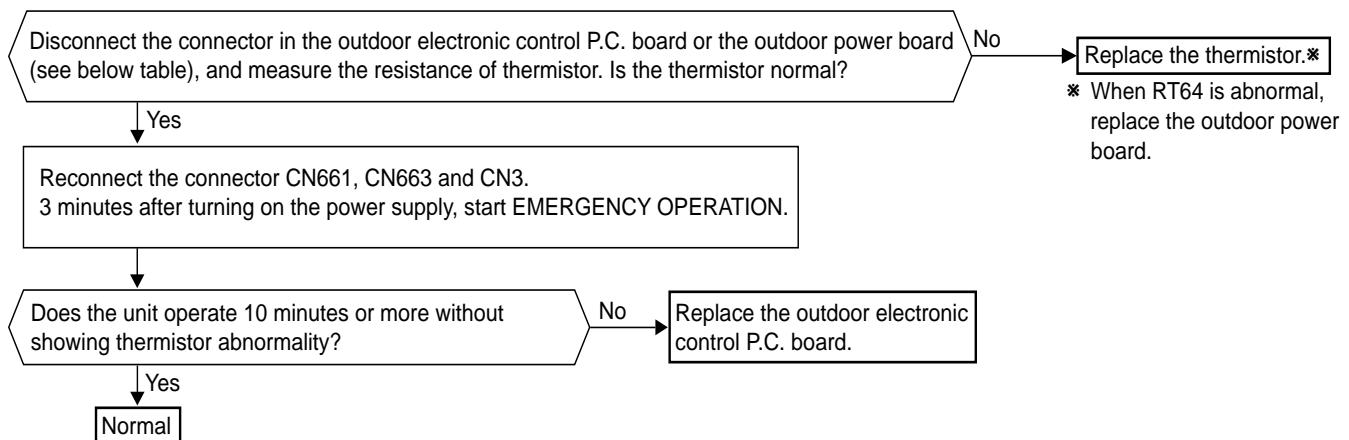
MUZ-GB50VA

Ⓐ How to check inverter/ compressor



- When OPERATION INDICATOR lamp flashes 6-time.
- When thermistor is abnormal.

② Check of outdoor thermistors



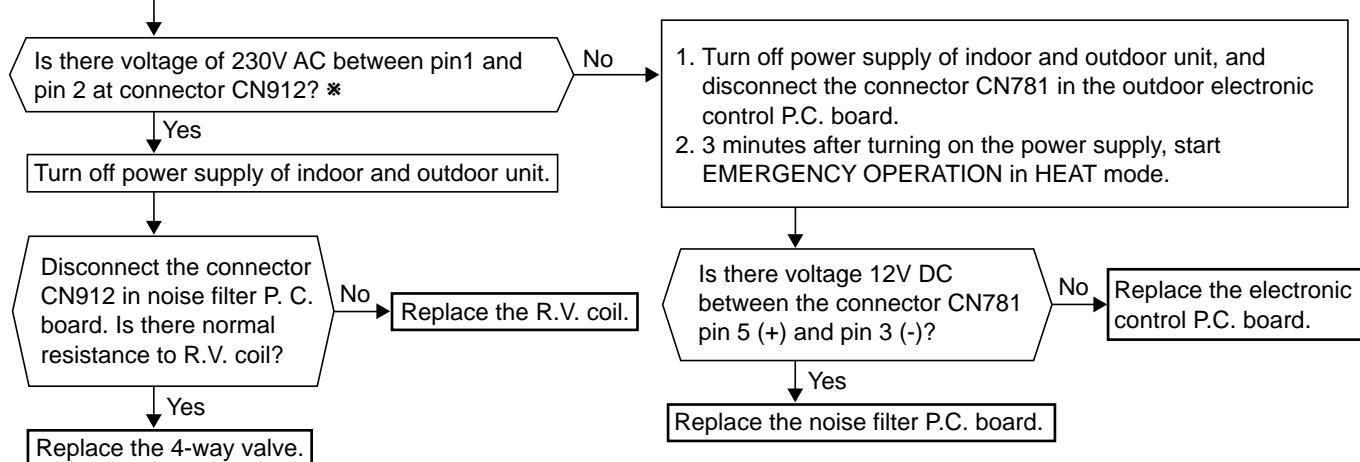
Thermistor	Symbol	Connector, Pin No.	Board
Defrost	RT61	Between CN661 pin1 and pin2	Outdoor electronic control P.C. board
Discharge temperature	RT62	Between CN661 pin3 and pin4	
Outdoor heat exchanger temperature	RT68	Between CN661 pin7 and pin8	
Ambient temperature	RT65	Between CN663 pin1 and pin2	
Fin temperature	RT64	Between CN3 pin1 and pin2	Outdoor power board

The cooling operation or heating operation does not operate. (LED display: Both LED1 and LED2 lighting)

© Check of R.V. coil

• When heating operation does not work.

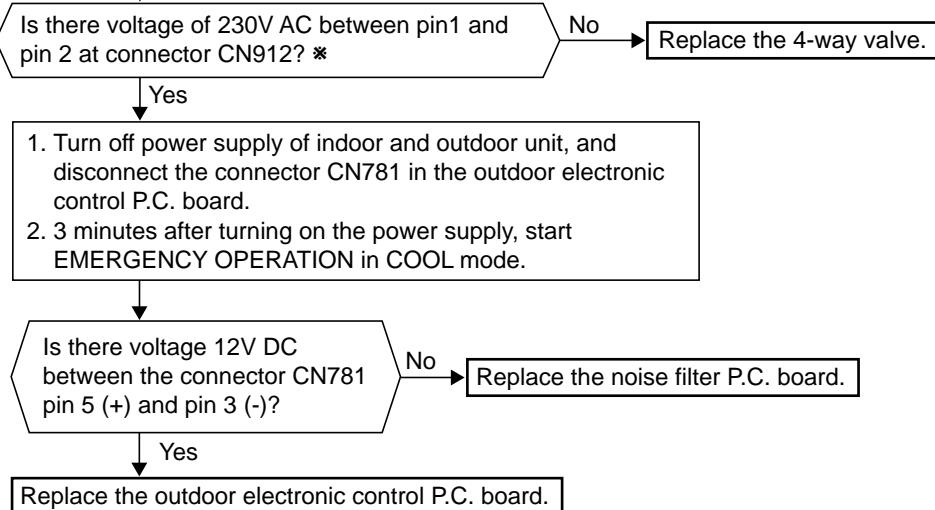
1. Disconnect the lead wire leading to the compressor.
2. 3 minutes after turning on the power supply, start EMERGENCY OPERATION in HEAT mode.



• When cooling operation does not work.

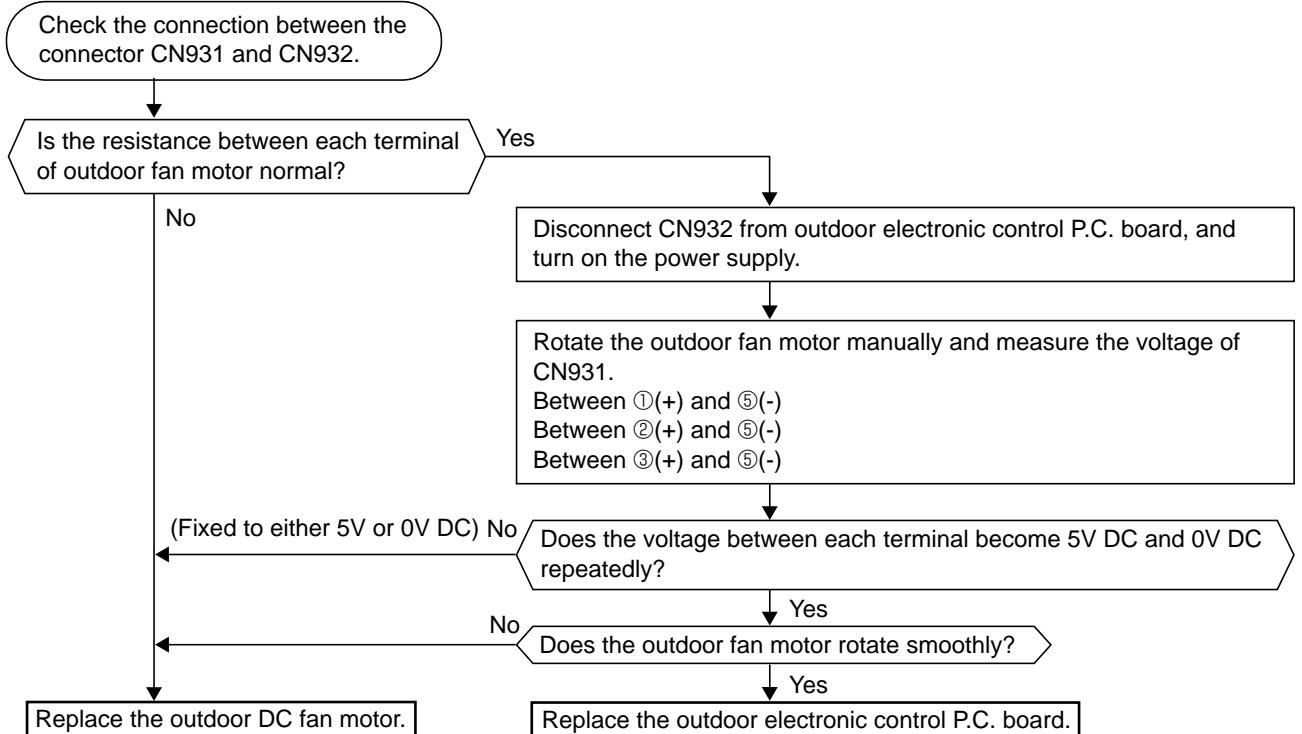
1. Disconnect the lead wire leading to the compressor.
2. 3 minutes after turning on the power supply, start EMERGENCY OPERATION in COOL mode.

* If the connector CN912 is not connected or R.V. coil is open, voltage occurs between terminals even when the control is OFF.



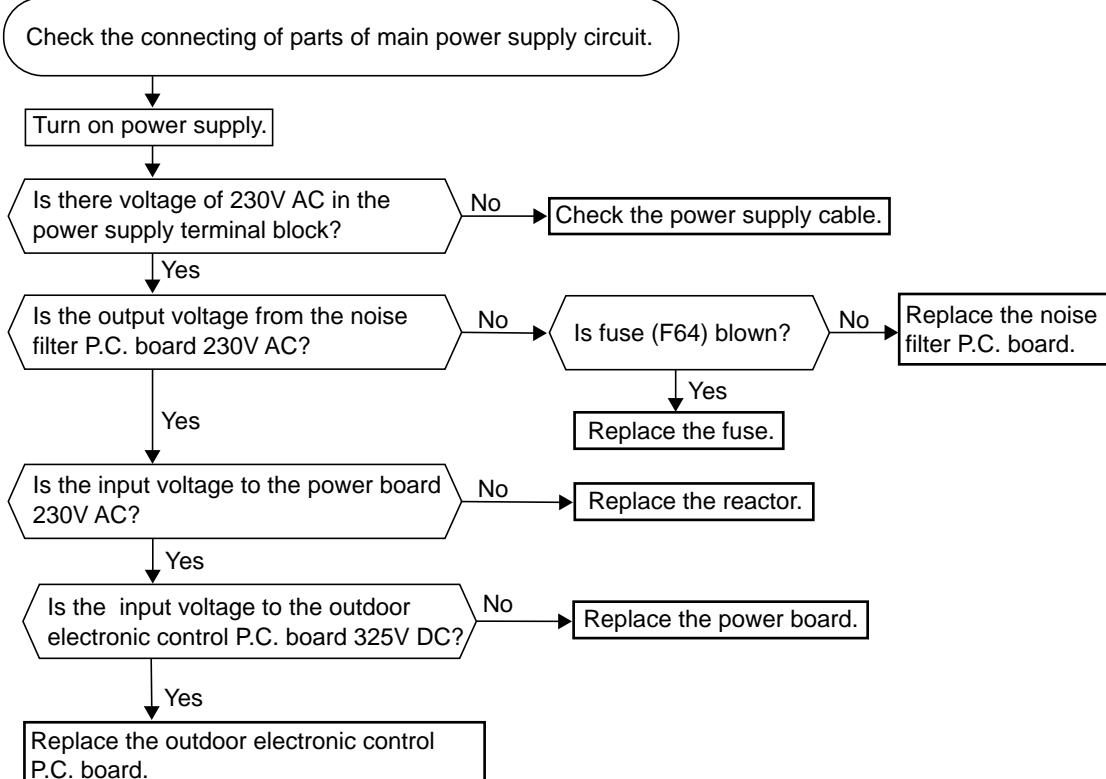
- Fan motor does not operate or stops operating shortly after starting the operation.

④ Check of outdoor fan motor



Outdoor unit does not operate. (LED display: display OFF)

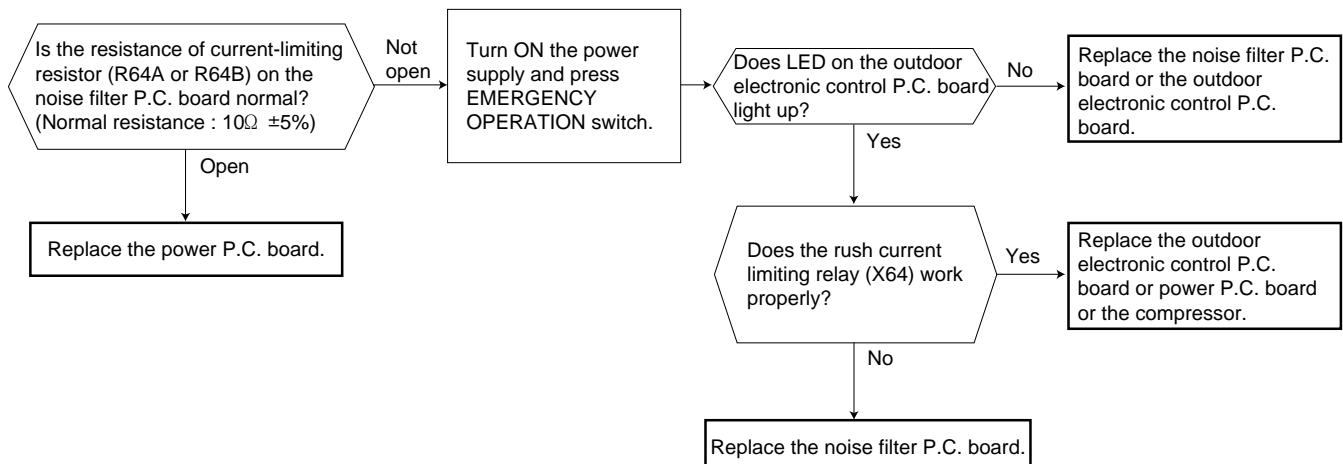
⑤ Check of power supply



Outdoor unit does not operate at all, or stops immediately due to overcurrent.

⑤ Check of current-limiting resistor

When the current-limiting resistor is open, the rush current limiting relay (X64) may not work properly.



● Check other electric parts in the main circuit together in the case that the current-limiting resistor is defective.

- When cooling, heat exchanger of non-operating indoor unit frosts.
- When heating, non-operating indoor unit gets warm.

⑥ Check of LEV

Turn on power supply to the outdoor unit after checking LEV coil is mounted to the LEV body securely.

Is "click - click" sound heard?
Or, do you feel vibration of the LEV coil with hands?

Yes → Normal

No

Disconnect the connector CN795.
Is there normal resistance to LEV coil?

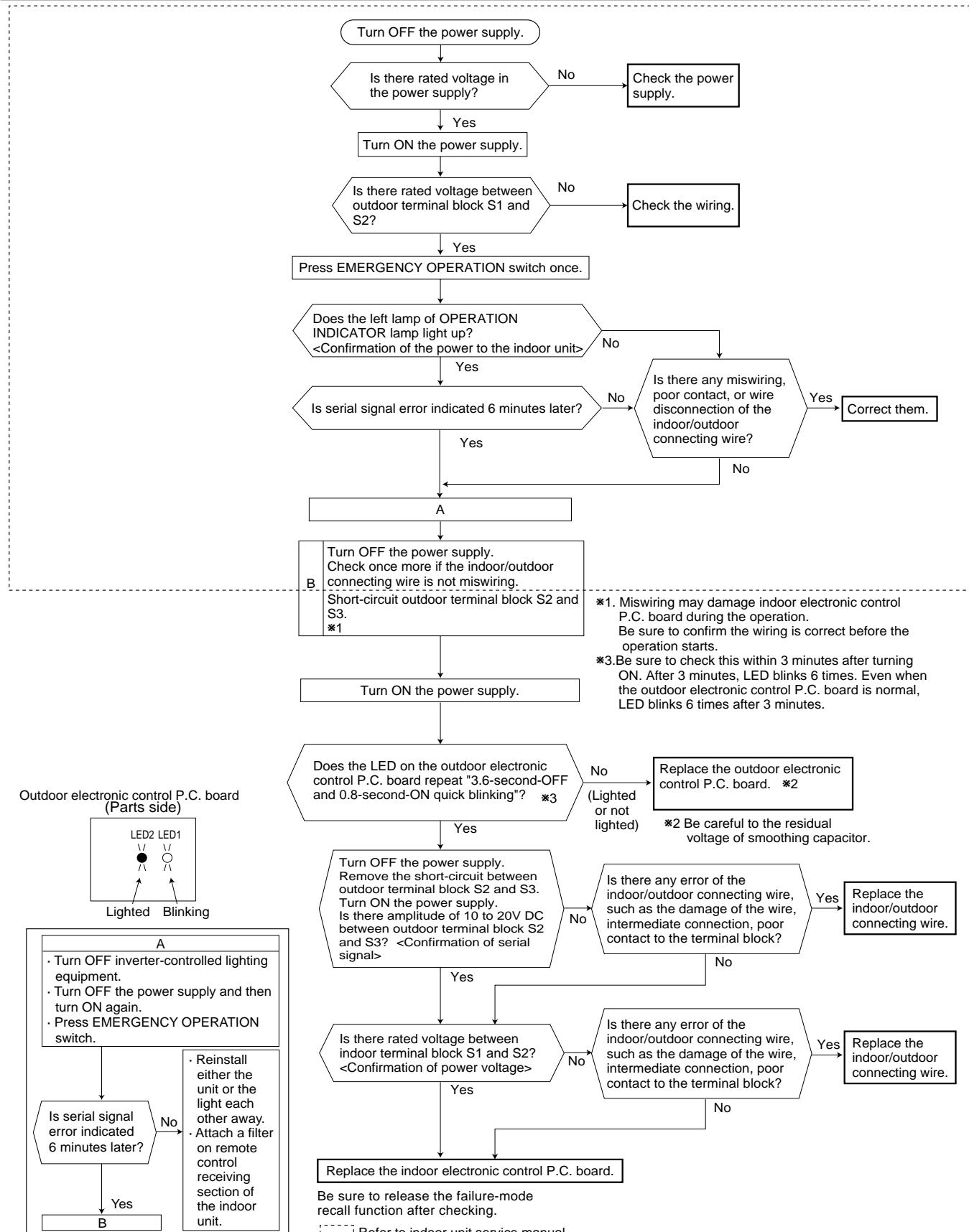
Yes → Replace the outdoor electronic control P.C. board.

No

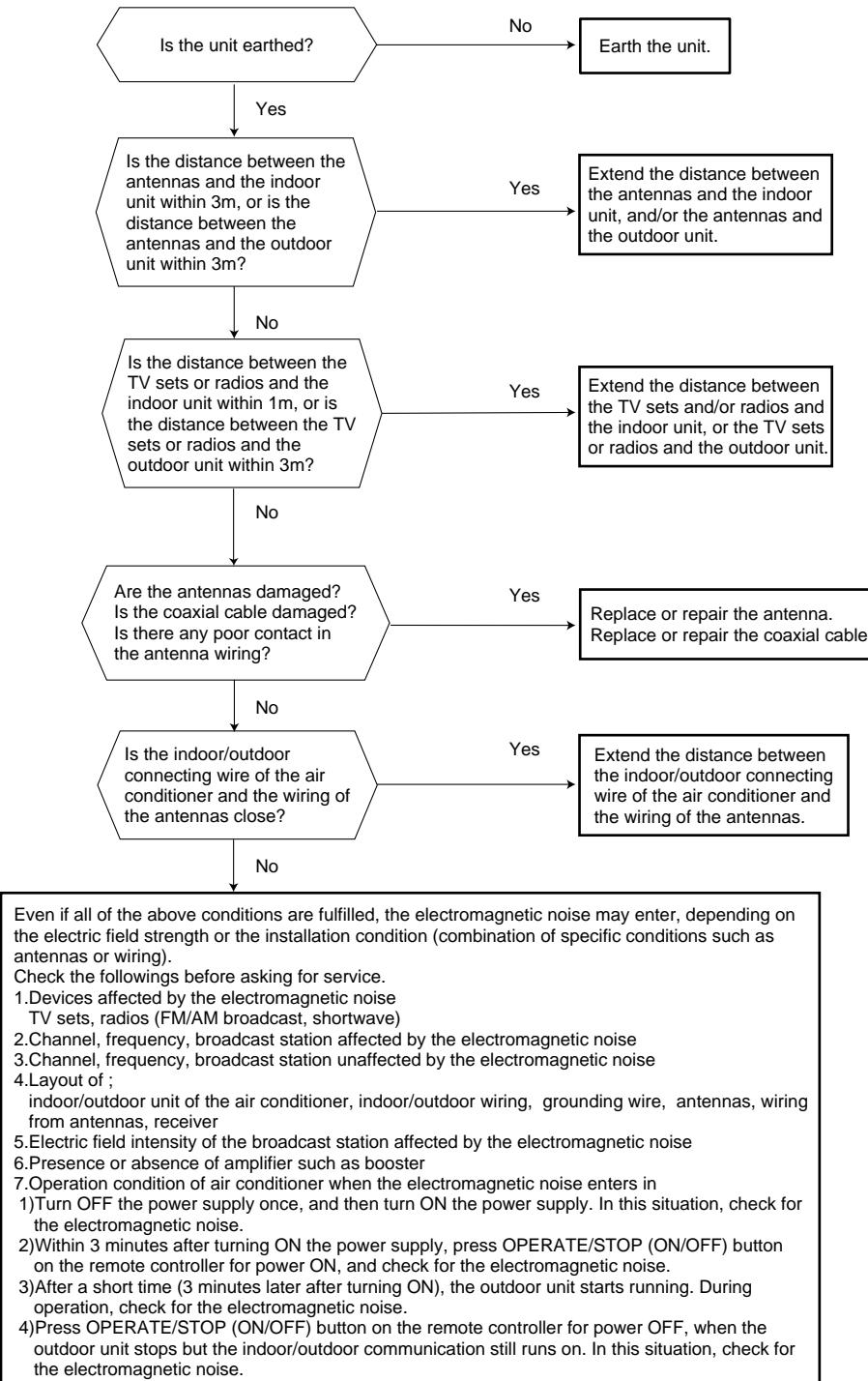
Replace the LEV coil.

- When unit cannot operate neither by the remote controller nor by EMERGENCY OPERATION switch.
Indoor unit does not operate.
- When OPERATION INDICATOR lamp flashes ON and OFF every 0.5-second.
Outdoor unit doesn't operate.

④ How to check miswiring and serial signal error (when outdoor unit does not work)

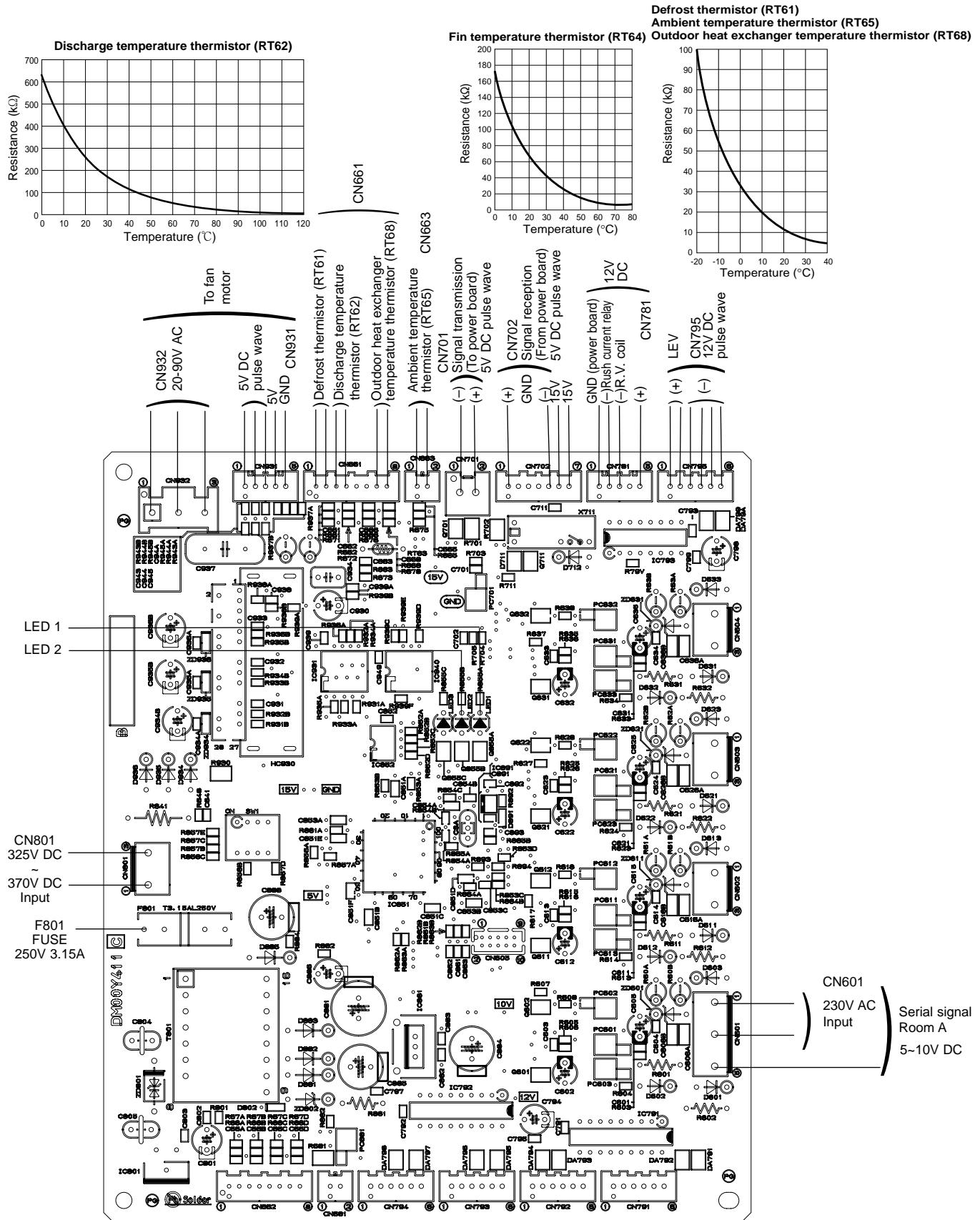


① Electromagnetic noise enters into TV sets or radios



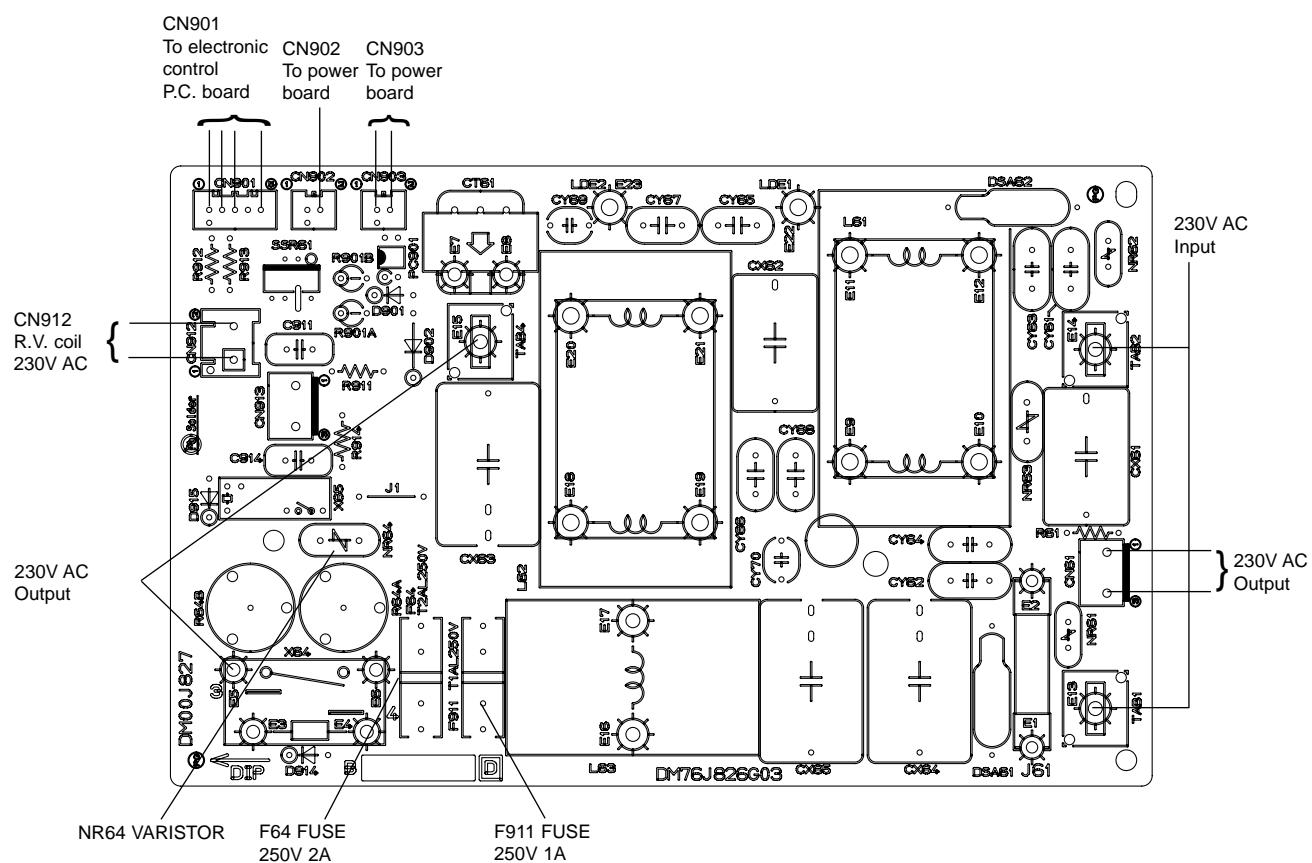
10-7. Test point diagram and voltage

1. Outdoor electronic control P.C. board MUZ-GB50VA

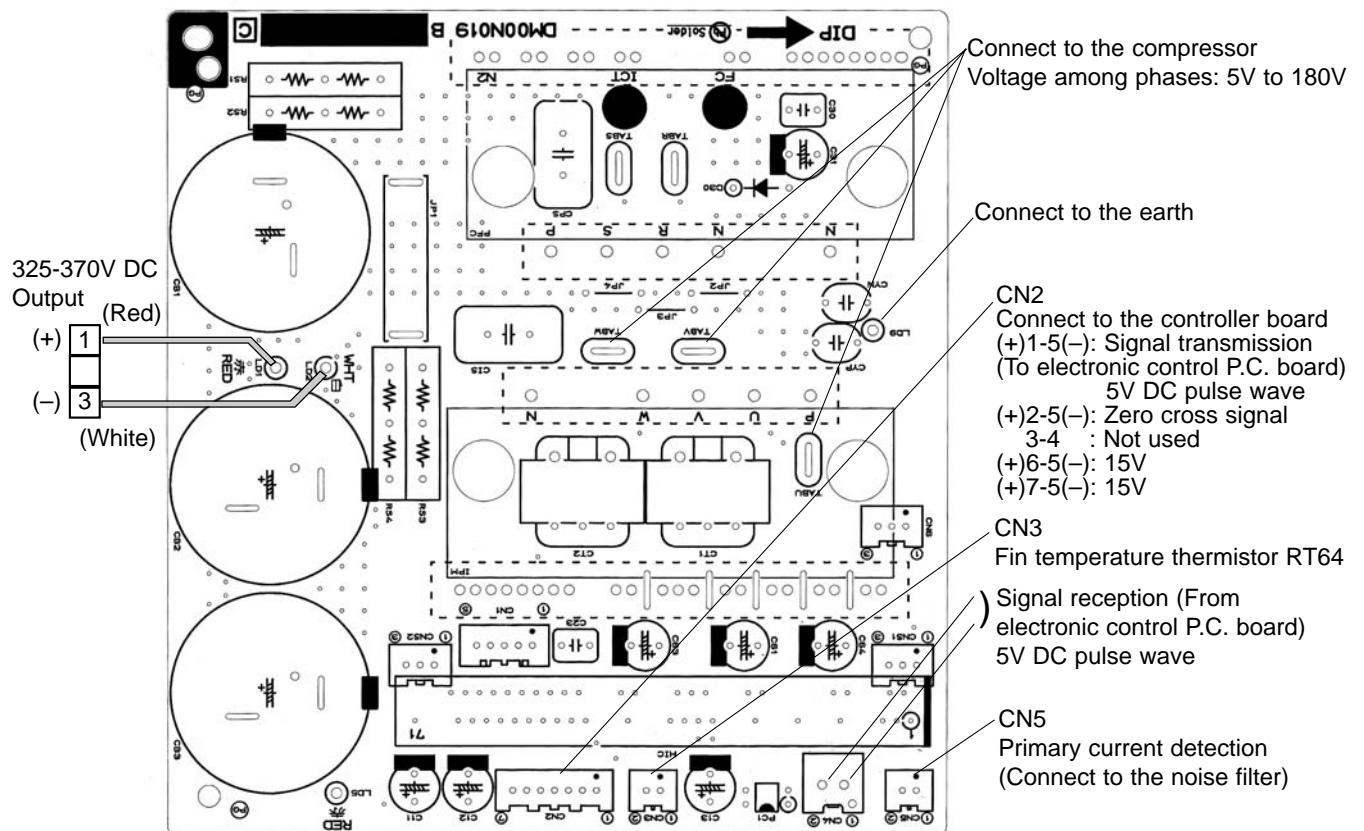
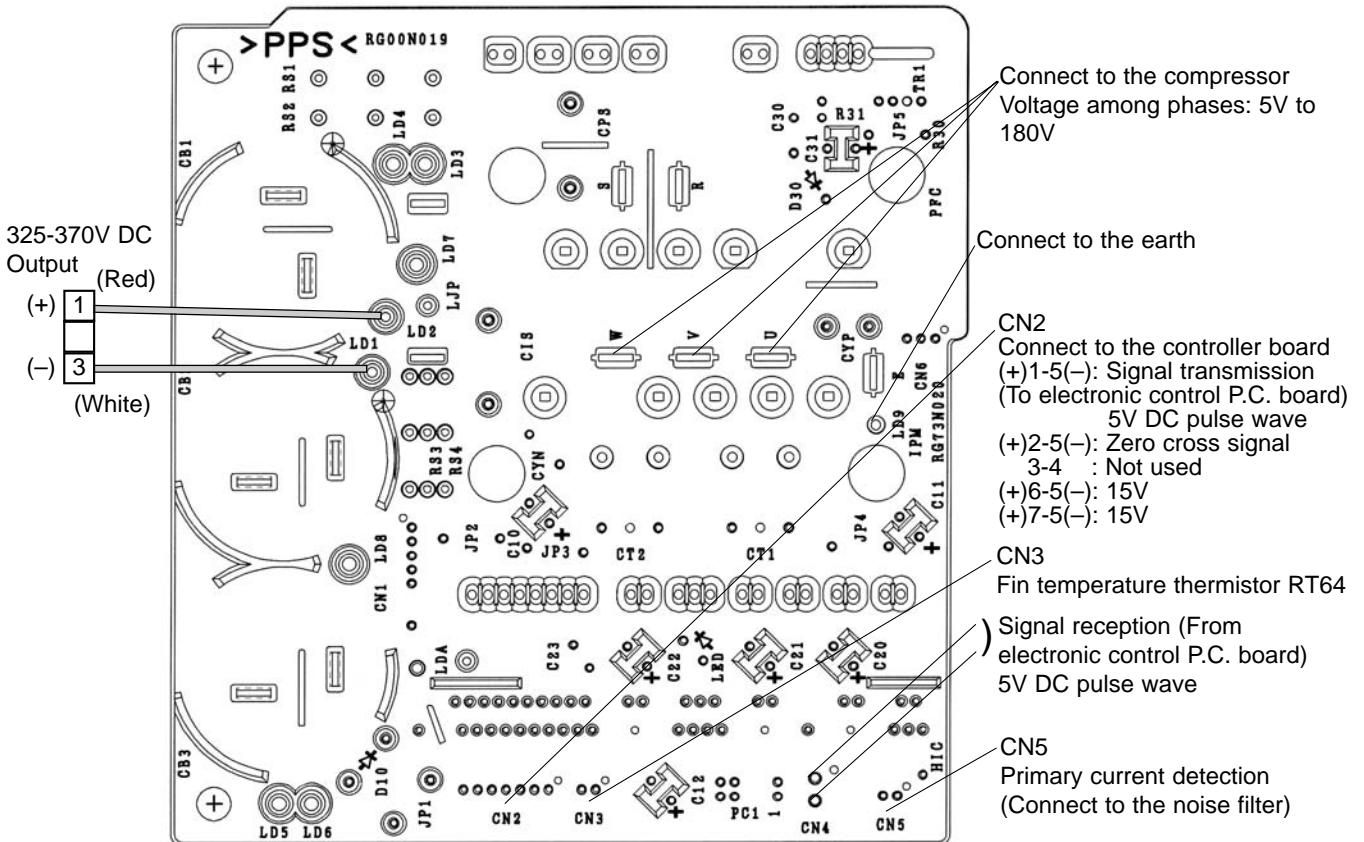


2. Noise filter P.C. board

MUZ-GB50VA



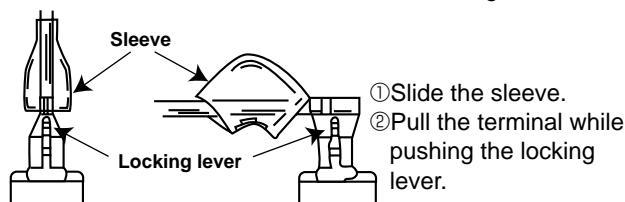
3. Outdoor power board MUZ-GB50VA



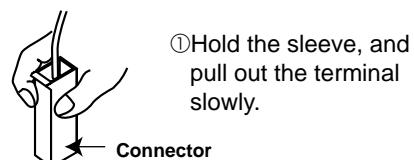
<"Terminal with locking mechanism" Detaching points>

The terminal which has the locking mechanism can be detached as shown below.
 There are two types (Refer to (1) and (2)) of the terminal with locking mechanism.
 The terminal without locking mechanism can be detached by pulling it out.
 Check the shape of the terminal before detaching.

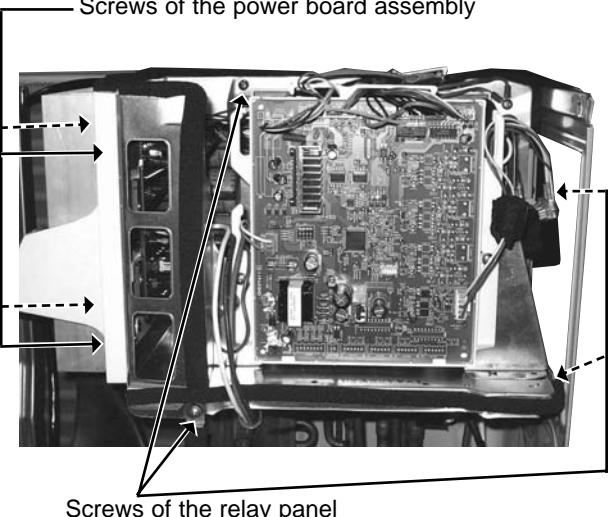
- (1) Slide the sleeve and check if there is a locking lever or not.



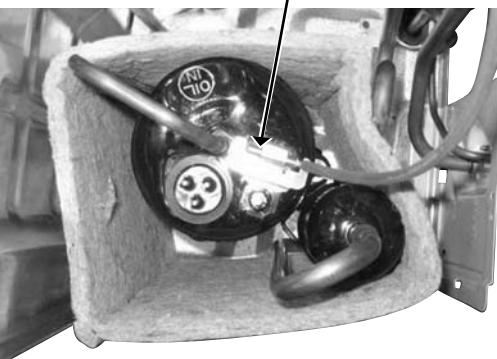
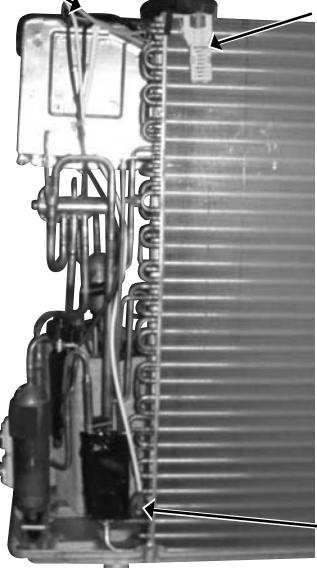
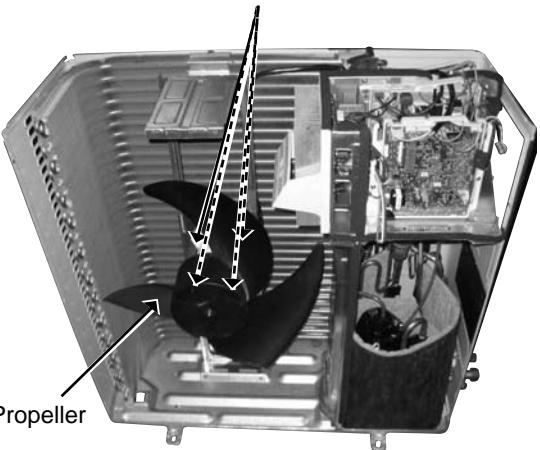
- (2) The terminal with this connector has the locking mechanism.

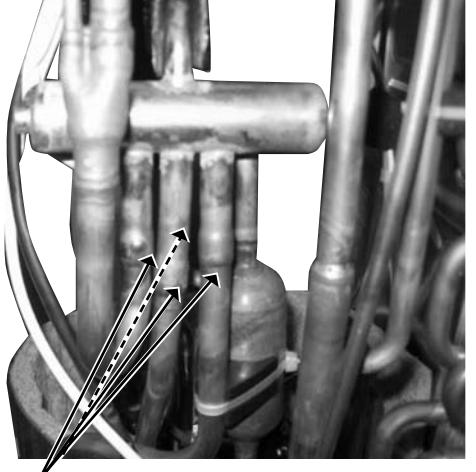
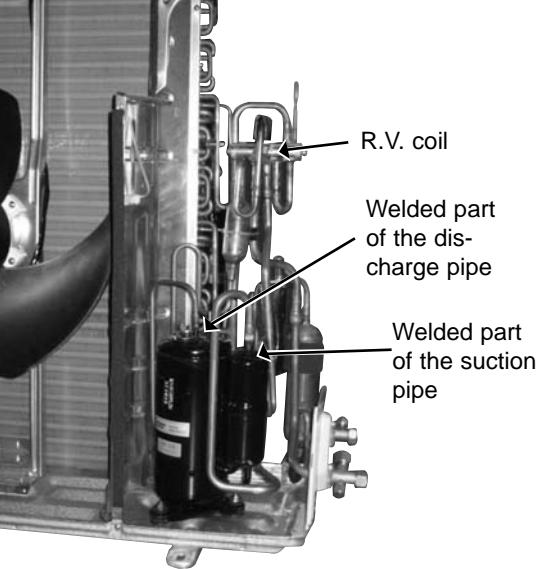
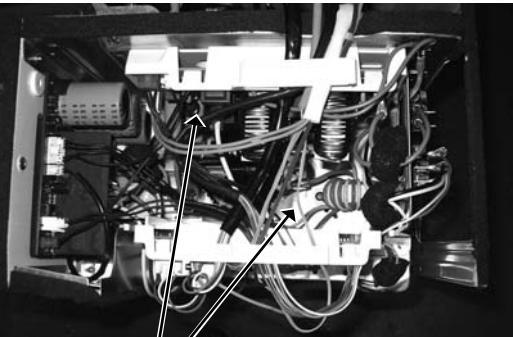
**MUZ-GB50VA**

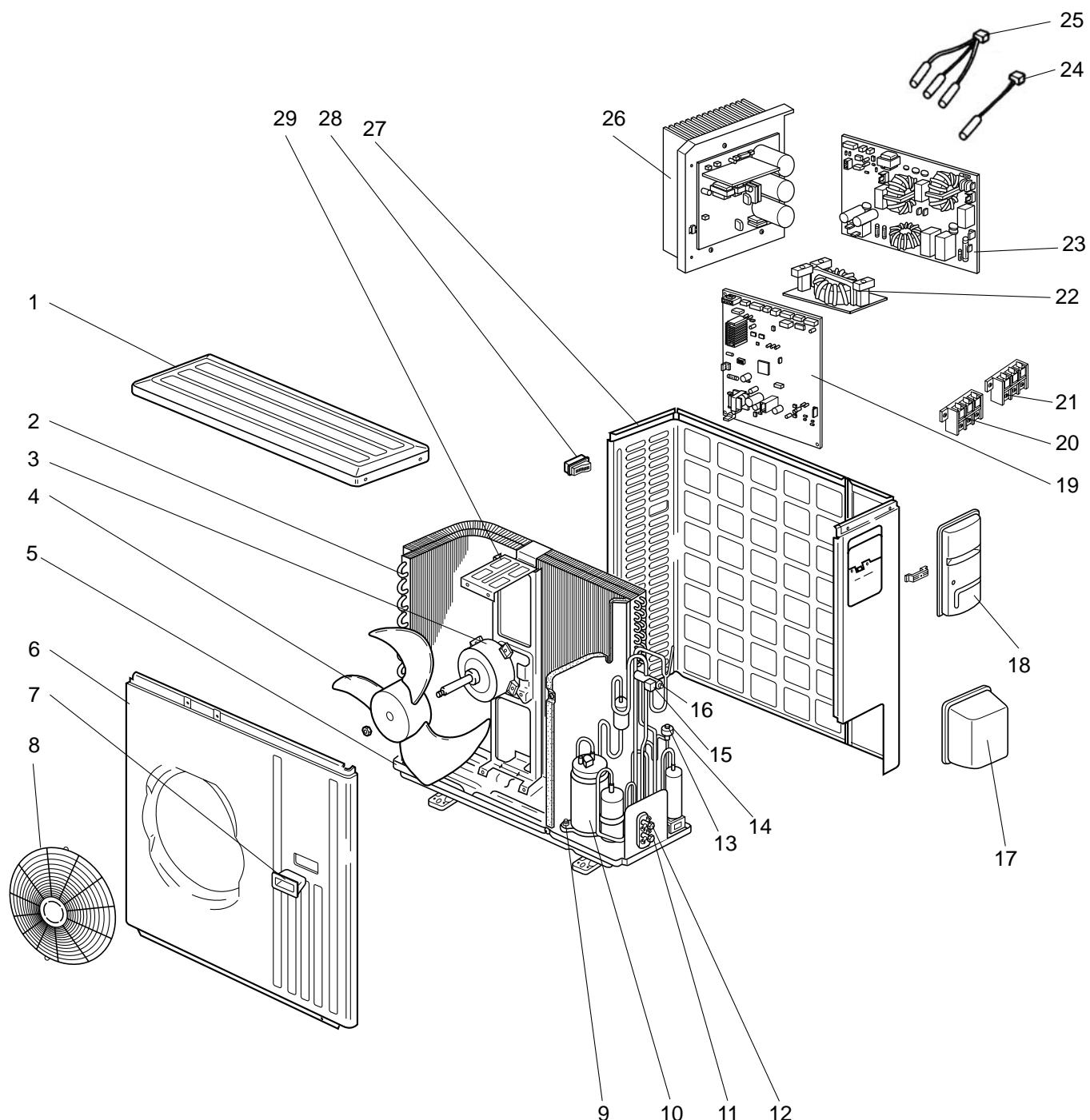
OPERATING PROCEDURE	PHOTOS
1. Removing the cabinet <ul style="list-style-type: none"> (1) Remove the screws of the service panel. (2) Remove the screws of the top panel. (3) Remove the screw of the valve cover. (4) Remove the service panel. (5) Remove the top panel. (6) Remove the valve cover. (7) Disconnect the power supply and indoor/ outdoor connecting wire. (8) Remove the screws of the cabinet. (9) Remove the cabinet. (10) Remove the screws of the back panel. (11) Remove the back panel. 	<p>Photo 1</p> <p>Screw of the top panel Screws of the cabinet Screws of the cabinet</p>
<p>Photo 3</p> <p>Screw of the motor support Screws of the back panel Set screws of the back panel Screw of the valve cover</p>	<p>Photo 2</p> <p>Screw of the service panel Screws of the top panel Screws of the cabinet Screw of the valve cover</p>

OPERATING PROCEDURE	PHOTOS
<p>2. Removing the inverter assembly, inverter P.C. board and power board</p> <p>(1) Remove the top panel, cabinet and service panel. (Refer to 1.)</p> <p>(2) Remove the back panel.(Refer to 1.)</p> <p>(3) Disconnect the following connectors;</p> <ul style="list-style-type: none"> <Electronic control P.C. board> CN931 and CN932 (Fan motor) CN795 (LEV) CN661 (Discharge temperature thermistor, defrost thermistor and outdoor heat exchanger temperature thermistor) CN663 (Ambient temperature thermistor) <Noise filter P.C. board> CN912 (R.V. coil) <p>(4) Remove the compressor connector.</p> <p>(5) Remove the screws fixing the relay panel.</p> <p>(6) Remove the inverter assembly.</p> <p>(7) Disconnect all connectors and lead wires on the electronic control P.C. board.</p> <p>(8) Remove the electronic control P.C. board from the inverter assembly.</p> <p>(9) Remove the screws fixing the power board assembly.</p> <p>(10) Disconnect all connectors and lead wires on the power board.</p> <p>(11) Remove the power board from the inverter assembly.</p> <p>(12) Disconnect all connectors and lead wires on the noise filter P.C. board.</p> <p>(13) Remove the noise filter P.C. board from the inverter assembly.</p>	<p>Photo 4</p> 
<p>3. Removing R.V. coil</p> <p>(1) Remove the top panel, cabinet and service panel. (Refer to 1.)</p> <p>(2) Remove the back panel. (Refer to 1.)</p> <p>(3) Disconnect the following connectors;</p> <ul style="list-style-type: none"> <Noise filter P.C. board> CN912 (R.V. coil) <p>(4) Remove the R.V. coil. (Photo 9)</p>	



OPERATING PROCEDURE	PHOTOS
<p>4. Removing the defrost thermistor, discharge temperature thermistor, outdoor heat exchanger temperature thermistor and ambient temperature thermistor</p> <p>(1) Remove the top panel, cabinet and service panel. (Refer to 1.)</p> <p>(2) Remove the back panel. (Refer to 1.)</p> <p>(3) Disconnect the following connectors; <Electronic control P.C. board></p> <p>CN661 (Discharge temperature thermistor, defrost thermistor and outdoor heat exchanger temperature thermistor)</p> <p>CN663 (Ambient temperature thermistor)</p> <p>(4) Pull out the defrost thermistor from its holder. (Photo 6)</p> <p>(5) Pull out the discharge temperature thermistor from its holder. (Photo 5)</p> <p>(6) Pull out the outdoor heat exchanger temperature thermistor from its holder. (Photo 6)</p> <p>(7) Pull out the ambient temperature thermistor from its holder. (Photo 6)</p>	<p>Photo 5 Discharge temperature thermistor</p>  <p>Photo 6 Outdoor heat exchanger temperature thermistor Ambient temperature thermistor Defrost thermistor</p> 
<p>5. Removing outdoor fan motor</p> <p>(1) Remove the top panel, cabinet and service panel. (Refer to 1.)</p> <p>(2) Remove the back panel. (Refer to 1.)</p> <p>(3) Disconnect the following connectors; <Electronic control P.C. board></p> <p>CN931 and CN932 (Fan motor)</p> <p>(4) Remove the propeller.</p> <p>(5) Remove the screws fixing the fan motor.</p> <p>(6) Remove the fan motor.</p>	<p>Photo 7 Screws of the outdoor fan motor Propeller</p> 

OPERATING PROCEDURE	PHOTOS
<p>6. Removing the compressor and 4-way valve</p> <p>(1) Remove the top panel, cabinet and service panel. (Refer to 1.)</p> <p>(2) Remove the back panel. (Refer to 1.)</p> <p>(3) Remove the inverter assembly. (Refer to 2.)</p> <p>(4) Recover gas from the refrigerant circuit.</p> <p>NOTE: Recover gas from the pipes until the pressure gauge shows 0 kg/cm² (0 MPa).</p> <p>(5) Detach the welded part of the suction and the discharge pipe connected with compressor. (Photo 9)</p> <p>(6) Remove the compressor nuts.</p> <p>(7) Remove the compressor.</p> <p>(8) Detach the welded part of 4-way valve and pipe. (Photo 8)</p>	<p>Photo 8</p>  <p>Welded parts of 4-way valve</p> <p>Photo 9</p>  <p>R.V. coil</p> <p>Welded part of the discharge pipe</p> <p>Welded part of the suction pipe</p>
<p>7. Removing the reactor</p> <p>(1) Remove the top panel. (Refer to 1.)</p> <p>(2) Disconnect the reactor lead wire.</p> <p>(3) Remove the screws of the reactor, and remove the reactor.</p>	<p>Photo 10</p>  <p>Screws of the reactor</p>

MUZ-GB50VA**12-1. OUTDOOR UNIT STRUCTURAL PARTS, ELECTRICAL PARTS AND FUNCTIONAL PARTS**

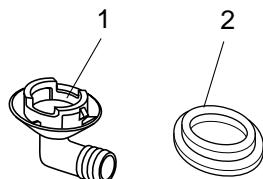
MUZ-GB50VA

12-1. OUTDOOR UNIT STRUCTURAL PARTS, ELECTRICAL PARTS AND FUNCTIONAL PARTS

Part numbers that are circled are not shown in the illustration.

No.	RoHS	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty/unit		Remarks	
					MUZ-GB50VA -			
					[E1]	[E2]		
1	G	E12 819 297	TOP PANEL		1	1		
2	G	E12 851 630	OUTDOOR HEAT EXCHANGER		1	1		
3	G	E12 938 301	OUTDOOR FAN MOTOR	MF	1	1	RC0J60- □□	
4	G	E12 851 501	PROPELLER		1	1		
5	G	E12 851 290	BASE		1	1		
6	G	E12 819 232	CABINET		1	1		
7	G	E12 819 009	HANDLE		1	1		
8	G	E12 819 521	FAN GUARD		1	1		
9	G	E12 C34 506	COMPRESSOR RUBBER SET		3	3	3RUBBERS/SET	
10	G	E12 939 900	COMPRESSOR	MC	1		SNB130FLDH1	
	G	E12 C06 900	COMPRESSOR	MC		1	SNB130FLEH1	
11	G	E12 851 661	STOP VALVE(GAS)		1	1	ø12.7	
12	G	E12 821 662	STOP VALVE(LIQUID)		1	1	ø6.35	
13	G	E12 851 640	EXPANSION VALVE		1	1		
14	G	E12 851 493	EXPANSION VALVE COIL	LEV	1	1		
15	G	E12 935 490	R.V. COIL	21S4	1	1		
16	G	E12 891 961	4-WAY VALVE		1	1		
17	G	E12 819 650	VALVE COVER		1	1		
18	G	E12 819 245	SERVICE PANEL		1	1		
19	G	E12 C95 450	OUTDOOR ELECTRONIC CONTROL P.C. BOARD		1	1		
20	G	E12 935 374	TERMINAL BLOCK	TB1	1	1	3P	
21	G	E12 823 375	TERMINAL BLOCK	TB2	1	1	3P	
22	G	E12 A87 337	REACTOR	L	1	1		
23	G	E12 935 444	NOISE FILTER P.C. BOARD		1	1		
24	G	E12 935 309	AMBIENT TEMPERATURE THERMISTOR	RT65	1	1	DEFROST, DISCHARGE OUTDOOR HEAT EXCHANGER	
25	G	E12 851 308	THERMISTOR SET	RT61,RT62,RT68	1	1		
26	G	E12 935 440	POWER BOARD		1	1	Including heat sink and RT64	
27	G	E12 819 233	BACK PANEL(OUT)		1	1		
28	G	E12 817 009	HANDLE		1	1		
29	G	E12 851 515	MOTOR SUPPORT		1	1		
30	G	E12 127 382	FUSE	F801	1	1	T3.15AL250V	
31	G	E12 737 382	FUSE	F911	1	1	T1AL250V	
32	G	E12 935 385	FUSE & VARISTOR	F64,NR64	1	1	T2AL250V	
33	G	E12 851 936	CAPILLARY TUBE(TAPER PIPE)		1	1	ø3.6xø2.4x50	
34	G	E12 853 299	OIL SEPARATOR		1	1		
35	G	E12 861 936	CAPILLARY TUBE		1	1	ø1.8xø0.6x1000	

MUZ-GB50VA
12-2. ACCESSORY



No.	RoHS	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty/unit		Remarks	
					MUZ-GB50VA -			
					E1	E2		
1	G	E12 817 704	DRAIN SOCKET		1	1		
2	G	E12 444 705	DRAIN CAP		2	2	φ33	

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